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ABSTRACT

Reported are 1973 conference proceedings of the National Association of Coordinators of State Programs for the Mentally Retarded (MR), which address the economics of service delivery to mentally handicapped children and adults. Conference speakers included a state legislator, a state budget official, an economist, and state and local officials. They discussed a legislator's and a state official's views of the impact of new budgeting techniques on the delivery of MR services; measurement of costs and benefits of MR services; program budgeting in a multiservice center for the handicapped; cost accounting within a public residential facility for the MR, and assessment of costs and benefits of alternative services for the MR speakers. Reactions to the presentations stressed the need for better information on which to base program decisions and the importance of relating data systems and cost accounting to improved client service. (LH)

PROGRAM BUDGETING AND THE MENTALLY RETARDED

Perspective Series : 1

NATIONAL ASSOCIATION
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PREFACE

Program Budgeting and the Mentally Retarded is the first in a planned series of special reports on cutting edge issues affecting the delivery of services to handicapped children and adults. We are calling this series the "Perspective Series" because we intend to address issues and trends which critically affect current and future service patterns.

This initial volume is based on a one-day symposium which was held at the Eleventh Annual Meeting of the National Association of Coordinators of State Programs for the Mentally Retarded in Atlanta, Georgia, May 28, 1973.

The purpose of this symposium was to analyze the impact of new budgetary techniques on the delivery of services to the mentally retarded. The topic was explored from a variety of vantage points in order to fully examine the issues involved. The speakers included a state legislator, a top state budget official, an economist who had recently completed a three year study of the economics of mental retardation and several state and local MR officials who have been involved in developing and testing various cost accounting and program budgeting systems.

We would like to thank the program speakers for not only participating in the symposium but also for taking the time and effort to review their oral presentations. Without their assistance, this publication would not have been possible.

We hope that the readers will gain from this document a sense of the important issues involved and the need for more sophisticated program budgeting techniques in services for the mentally retarded and other developmentally disabled persons.

THE IMPACT OF NEW BUDGETING TECHNIQUES ON THE DELIVERY OF MENTAL RETARDATION SERVICES:

A View from the Legislature

The Honorable Gary R. Marbut

Mr. Chairman, distinguished ladies and gentlemen, I bring you greetings from the great state of Montana, and from the Governor of that state, the Honorable Thomas L. Judge, a man who is dedicated to the alleviation of the subnormal conditions under which most mentally retarded people live.

When I was first asked to address you today, as a part of this enlightened and futuristic program, I wondered what I would say, and why I had been selected. In pursuit of an answer, I phoned my friend Don McNeil, the Chancellor of the University of Maine. Don offered to solve my problem by sending me a copy of a speech he made recently in Denver, Colorado. Chancellor McNeil said, "I always view with trepidation the need to speak to people who know more about a subject than I, but then as Chancellor of the University of Maine I do this all the time, so there is really nothing unusual about talking to people better informed than I." Reflecting on the remarks of the Chancellor, my thoughts turned to the question--why me? Why should I be standing here before you?

Paraphrasing the immortal words of Elizabeth Barrett Browning, "Why do I care, let me count the ways." Let me say that I know each of you is a professional in your own right. You have had years of experience, and I certainly do not intend to match either wits, or conclusions with you. However, it has been my privilege to learn about many state programs for the retarded. I have visited nearly half of this country's major institutions. I serve on the board of directors of the National Association for Retarded Children, and this organization has provided an education all its own.

You should know that I am the parent of a retarded child. Let me describe my child: He is a handsome lad, 17 years old, stands two inches taller than I do and he can do almost everything better than I can. He is a successful high school student, in special education. He has a great future ahead of him, and suffers at this time from only one serious handicap; namely, the recent fracture of his leg in an exciting double play in a baseball game.

Also let me say that I am a politician. I am a member of the Montana Legislature, where I serve on committees on judiciary and public health, welfare and safety.

The Honorable Gary R. Marbut is a member of the Montana House of Representatives, President of the National Center for Law and the Handicapped and a Board Member of the National Association for Retarded Children. As a member of the Montana Legislative Audit Committee and the Committee on Public Health, Welfare and Safety, he has a keen insight into the political and social forces which affect the allocation of public funds for services to the mentally retarded and developmentally disabled.

Perhaps my role here might be perceived as a sort of ecumenical one—interdisciplinary you might say—a role in which I hope to pull together a variety of experiences and give you my thoughts about the future of our profession.

I must confess to you that of all these roles I have been describing, my favorite role is that of politician—albeit a small-time, country, western, simple politician—but a politician nonetheless.

The fabric of American society has been carefully woven with a clear articulation of the rights of its citizens. We started with a carefully drawn and enlightened set of statements following from the Constitutional Convention. Then we expanded our code with a special Bill of Rights to underscore the specific freedoms, rights and responsibilities we have always held necessary, and desirable, for a free and prosperous country. It is that Constitution that provides us all with our individual freedoms and rights. By all, I mean all citizens, including the mentally retarded, and let that not ever be forgotten.

As the quality of life has steadily improved, we have become more aware of those among us who seem to be different. Those who are less affluent, those who are less competent, those who are in greater need, but who are nonetheless citizens in the full sense of the word.

In many ways the advances of science have demonstrated for us the great capacity of every person to improve their level of competency through education, administered through the due process of law, and a right to treatment within the context of the community in order to optimize and repair those senses that will fully appreciate a free society. It is remarkable that in the last ten years we have succeeded in substantially reducing, stabilizing, or in some cases preventing a number of the conditions that lead to mental retardation.

We do not yet have a full grasp of the cause and effect relationship between the complex conditions of poverty and the disproportionate number of poorly socialized, intellectually subnormal and developmentally retarded children and adults living in the lower regions of our society. But, we are forging ahead with the basic and applied research in the biomedical and behavioral sciences to try to understand this condition. We have increasingly attended to the ways in which the products of research can be moved swiftly and effectively into the hands of service people and we have become increasingly astute at the planning and evaluation business that will help fine-tune our service strategies to treat and prevent mental retardation, and its accompanying social and physical deficits.

But the law lags behind. It languishes at a time when it should be taking the initiative. It vacillates on the topic of competence when it should be asserting the individual's rights and the community's responsibilities. It remains passive when what is needed is outreach.

The increased cost of providing human services is becoming the most important business of state legislatures. Many, many, individual legislators are taking a personal interest in health and social programs. We are no longer content to leave these decisions to the specialized fiscal and budget committees. "Social professionalism" is emerging in the legislatures—with new legislative tools and problems, including annual sessions, research staff, program and fiscal audits, together with inflation, escalation of operating costs, and the demands of state employees for higher wages. As we gain in knowledge to deal more effectively with

human service problems, we find it necessary to allocate more and more of our financial resources to these programs. The national movement to replace traditional institutional models of treatment with community-based programs is causing individual legislators to focus their attention on the needs of their own home communities.

There are other factors which are permeating legislative thinking: The concept of "measurement" is becoming a realistic means of influencing legislative decisions. The establishment of standards, such as accreditation standards of the AC\FMR is making it possible to compare alternatives, and to measure these alternatives in statistical, programmatic and fiscal ways.

As the federal government retreats from its position of "Sugar Daddy" to the mental retardation movement, it seems clear to me that state decisions will be the decisions which make or break our rams in the next few years. Also, localized, decentralized government must me the responsibility of caring for the disadvantaged, and meeting social eeds in their midst. All this requires that far more of the money which is paid to the government remain at the state and local level. This must not be confused with revenue sharing, which I regard, quite candidly, as a hoax which will probably increase rather than diminish the power of the federal government.

We must act to take the only realistic option—a decentralized society with planning and self-government empowered at the local level. This power must be matched with local capacity for decision making.

The National Developmental Disabilities Program, which started with brave promises, now seems in doubt. Granted that some much-needed services ave been initiated. The question is, will state governments follow through by continuing and expanding these services?

An important arena for social change has been the courts. Nearly 50 class action lawsuits have been filed across the country. Some of these seek to insure education rights, some rights to treatment, some freedom from peonage and some freedom from classification. As many gains as have been made through the courts, I need to express a word of caution: As I look to those nine great gentlemen in Washington, sitting on the United States Supreme Court, and as I picture in my mind Mr. Justice Douglas ascending the green mountains of the State of Washington in pursuit of his lovely young wife, and as I hear about a certain conservative gentleman from Texas who is waiting for an opportunity to join the bench, and as I realize that any change in the court would tip the balance away from social change, I say to you that we must be prepared to plead our case before the Executive and Legislative branches of government as well as the Judicial branch.

Compounding the problems mentioned in this paper, the country is facing a fiscal and taxation revolt. The taxpayers at home, my home and your home, are simply unwilling to contribute increasingly greater shares of their productivity for governmental purposes. The arguments of five years ago about social benefit and humanitarian values, are no longer sufficient to persuade the people that greater contributions are justified. The problem in 1973 is how to provide better and more effective programs, without the use of more money.

There is more bad news: We are in a highly competitive position. Other programs, other causes, other objectives want bigger shares of our fiscal

resources. In my state, many people wish to reserve revenues derived from the sale of motor vehicle fuel solely for the construction and maintenance of highways. These people underscore their demands with volumes of hard data about where the money came from, the job it will do (expressed in quality of construction and miles of roads) and the persuasive statistical argument that lives will be saved and pain and suffering alleviated. Those of us who are advocates for the mentally retarded must be resolved to play ball on a diamond of facts, hard statistical data, measurable probabilities, cost effectiveness, evaulation and the proven costs of alternative models and programs.

The preparation for this "new ball game" must include cost accounting, program budgets, frequent reporting periods and a thorough investigation of the means for documenting what can be accomplished with a given number of dollars.

One aspect of changing institutions has to do with the hard, cold fact of economy. There are only so many dollars. We hope there will be more, but again, we must find a better way to manage what we have now. In the next year or so we need to know exactly what it costs to apply the skills that we know are necessary to get a child out of an institution, against the cost that we can calculate for simply leaving him in.

As an example, in one program called "Operation Benchmark," it was learned that in order for a severely retarded boy to learn to put on his shirt correctly, it takes 36 hours of operant training time in 20-minute intervals. We know that 36 hours of time by a staff skilled in the techniques of behavior modification, costs the state approximately $800. Washing hands took about 37 hours on the average; washing the face about the same; brushing teeth approximately 40 hours; showering about 36 hours; and putting on trousers about 17 hours.

What needs to be assembled is information that can be presented to my legislature and to your legislature on the hard, cold economy of the situation. That is what we must know. With this information in hand, it will be possible to say to the legislature, "This number of children need this number of schools in order to achieve community placement." We can say, "This number of schools will cost this amount of money." We can say, "These proposals will cost less than the alternative of institutional dependence." We can say, "You spend the money, and we will do the job" and that approach will win.

Good program management, including good institutional management, must have verifiable cost reporting procedures.

My legislature has a strong post-audit committee. This committee, of which I am a member, is charged by law with determining that legislative programs are being followed, that funds are being appropriated and spent in accordance with legislative intent and recommending improvements for maximizing program effectiveness and minimizing program cost. Until now we have typically divided fiscal direction into units of personnel, departments, sections, and other artificial cost groupings. Beginning now we are interested in an accounting and reporting procedure which will tell us what our dollars are doing for each citizen and how the same dollars might be utilized in alternative or competitive programs, and all measured in interchangeable terms. We will no longer accept hidden expenditures, padded budgets, unauthorized transfer of funds, or misappropriated funds. In my state we have recently arranged for housing for a major state official in the state penitentiary as a result of just such a misappropriation.

If this sounds like I am advocating a system which will require more work and more expertise from mental retardation professionals, you are right. If it sounds as if I am advocating that you accept the burden of researching and preparing cost comparisons, you are right. If it sounds as if I mean that mental retardation professionals will no longer be permitted to withdraw behind the cloak of public unawareness, misunderstanding and lack of interest, you are right. If it sounds as if I am suggesting that you grasp the opportunity to become true leaders in converting institutional dependence into community productivity, you are right. If this sounds like an impossible job, an unrewarding task, a thankless effort, a hopeless cause, you are wrong.

You professionals are coming forward with new, better programs faster than the legislative process can move. We no sooner approve and fund one new program, than you are requesting approval for six more. We recognize the great social values of your requests, and appreciate that your knowledge in the field of mental retardation may be growing faster than in any other field. The deficit, and it is an important deficit, is that you have directed your energies into the social and humanitarian values, with too little attention to the realities of governmental and political process. What is the relative cost and cost effectiveness of one program alternative over another? Given all the dollars we could wish for, these questions would not arise. However, you the experts, it is strongly suspected would not truly know which of any two programs costs more, and which costs less. In my area of the country, certain states are hanging on to traditional institutional models, just for this very reason. These states do not think they can afford to change. Until cost effectiveness can be fully demonstrated, they probably will not change. Do you really know enough about proposed innovative programs to justify cost effectiveness as it is related to an individual patient? Are you undertaking research to find out? Do you intend to share and pool the results of your research? Do you place a resident or patient into a program to fill the program or because the program is new? Do you believe in a program panacea, closing your mind to alternatives? Are you willing to listen? Are you willing to learn? Are you willing to change? If you have the correct answers to the preceding questions, you can help me as a legislator, and as a legislator I can help you.

I would like to think that we are gathering together here in Atlanta as a team: a team dedicated to the quest for improved living, training and treatment facilities for our mentally retarded citizens. I suggest that the best possible fruit of our work here is a cross pollinization of ideas, a collection of strategies and a revitalized determination for each of us to do better.

If, as Samuel Johnson said, "The law is the last result of human wisdom acting upon human experience for the benefit of the public," Then we cannot fail to see the logic of providing equal rights to mentally retarded citizens.

Legal advocacy has become a strong weapon in our efforts to improve the quality of life for the mentally retarded and their families. We must continue to press on. We must also assist in raising those resources necessary to follow through, and above all, we must effectively utilize the legislative branch and the executive initiative as well as the redress of grievances through the courts as a spectrum of approaches to solving this historic problem.

If the human and civil rights of the mentally retarded are ever to be restored, it must be through a strategy of public education, action by agencies and

organizations, development of human and economic resources from the states to provide the necessary services, and a constant vigilance that we never again permit this country to create and maintain a surplus population without the rights of full citizenship.

THE IMPACT OF NEW BUDGETING TECHNIQUES ON THE DELIVERY OF MENTAL RETARDATION SERVICES:

A View from the Governor's Office

Robert Brady

If I had to point to the most difficult problem facing states that have a central budget staff and an executive budget, I guess it would be the lack of sufficient, relevant data about programs and the organization of that data into understandable terms. Now, the reason I say this is because in Tennessee, outside of higher education, we have identified over sixty-five major programs and well over 1,000 activities and sub-programs within those major programs.

Our current annual system of budgeting has many, many problems. One defect is that it assures the continuation next year of what we did last year. We use an incremental budgeting system which is a good system except for the fact that we do not look at existing activities and programs to see whether or not they are needed any longer.

This year, because we are just initiating the program budgeting system in Tennessee, we used the incremental approach to arrive at an operational budget. The difference between last year's commitment and anticipated state revenue this fiscal year, represents the funds we have available for new and expanded state programs. We were fortunate to have about $100 million of new money in Tennessee this year. However, the competition for these funds is fierce. With nearly a $2 billion state budget, our problem is, how do we allocate these new dollars among competing program interests.

Regardless of which approach to budgeting is taken, two things will never change in the budgeting system. One is the concern for cost and control. The second is the basic political decisions that we in the governor's office must make.

Now, I suppose every state is somewhat unique. In Tennessee we have a strong executive budget. The current problem is that we have a strong Republican governor dealing with a strong Democratic legislature. So, there's all kinds of bargaining that has to go on.

We have tried to organize state government so that we can maintain a comprehensive overview of public programs. We now have within the Governor's office a policy planning group, a program coordination and analysis group, a budget division and a management services division. In addition, we are trying to develop some expertise about all of our major programs and sub-programs by assigning individual budget staff members to work directly with departmental administrators.

Mr. Robert Brady, at the time of this conference, was Director of the Division of Program Coordination and Analysis in the Tennessee Department of Finance and Administration. Prior to assuming this position in 1972, Mr. Brady held several other positions in Tennessee state government including Chief of Budget in 1967 and Coordinator of the Governor's Study on Cost Control in 1971.

In the past, we would send a budget request to the fiscal officer. He put on his green eye shade, figured out how many dollars were needed and sent it back. But this year, as we moved into program budgeting, we let program administrators fill out their own budget requests. This was a big step for them because they had never before performed this function in our state.

The best thing that we can say about our program budgeting in Tennessee is that it did give us some information which we have never had before about all state programs. It also gave the people who are in charge of the programs a chance to tell us what they wanted and needed in the way of state funds. Even though we maintained the incremental system this year, we, I believe, have made a better allocation of state resources.

Before I left Nashville, I wrote down a few statistics to see how well human service programs did in the competition for fiscal resources. This year, 40 percent of the new dollars, or $40 million, was committed for welfare, public health and mental health programs. On a percentage basis, I feel this is quite a good performance, especially since only about 28 percent of the new dollars went to these same programs last year.

The state of Georgia just conducted a survey and found that, of the 34 states which answered the questionnaire, 23 (68 percent of the reporting states) were developing program budgeting techniques. They are calling their programs PPBS, zero-based budgeting or performance budgeting. In Tennessee we call our program allocation by activity.

We are trying to put all of the performance data on computers to help us make decisions. The administrators out in the field are being asked to develop the statistics and the relevant data about their programs to go on the computer. I am sorry to say that it is going to take from three to five years before we have our total system in place. That is, it will take that long before we begin to receive data which is meaningful in terms of executive decision making concerning allocation.

The trouble with our old system was that we always looked at the cost of programs. We never looked at the end results of these programs—i.e., what was the program accomplishing? We think that under our new system we will begin to examine program accomplishments. In fact, we had better have some program information because our legislative comptroller is going to start program auditing in our state. As I see it, you can't really audit a program unless you can identify program goals and accomplishments.

One of the implications of program budgeting for you as administrators is that the legislators and the general public are demanding more information about programs because the cost of the government is increasing at such a rapid rate. I know in Tennessee one of the main objectives of our program budgeting system is to place upon the program administrator the responsibility to perform up to a certain standard. So, if you develop a system, either within your department—which the Department of Health in Tennessee is now doing—or from an overall budget office viewpoint, the system should point out where the duplication exists. It should also point out whether an activity or program is needed any longer or if it should be abolished. When you try to abolish any activity or any program, then you can count on getting political pressures. New programs are hard to come by, but old ones are awfully hard to get rid of, as we all have found out.

All programs should be related to certain objectives The objective, if it is at all possible, should be set in quantifiable terms so that you can do some program performance measuring during the year and, when the program is over, you can measure the impact of the program on the community. That's the kind of program evaluation which we are going to try to establish in Tennessee.

But it is awfully hard to develop the relevant kinds of information that you can put into a computer and into a system of quarterly or semi-annual reports. The two essential questions that we are trying to answer now are, how effectively has the program performed during the year and where do we fix responsibility for program performance. Then, when the program is completed or the fiscal year ends, an after-the-fact evaluation of the program can be conducted to see whether or not the program has accomplished its objectives.

Mental retardation is not the only program in our state which is trying to orient itself towards the community. Practically all human service programs in Tennessee are going through the same process. And all of these different programs are competing for the state dollar. In the State of Tennessee eighty to eighty-five percent of all state revenue is dedicated or earmarked for a specific program. This leaves only a small portion of funds unobligated which we have to consider when we talk about program budgeting. This small portion of undedicated revenue usually goes to the program with the greatest political clout. That's the way it works in our state. And I'll have to say that the Department of Mental Health in the state of Tennessee has really grown and developed a very effective lobby for its program.

In conclusion, the things that I've tried to make clear to you today are: (1) that you need to organize properly; (2) that you need to try to develop relevant data about your programs because we are talking about competition for the dollar; and (3) that the data which you develop has to be put in laymen's terms so that people like myself and many of your state legislators can understand what you are trying to say.

REACTOR

Edward R. Goldman

INTRODUCTION

Robert Brady talked about the introduction of a program planning budgeting system in Tennessee. A major part of the problem of instituting such a system is getting the programmatic data you need to make decisions. I'm sure all of you have suffered through the agony of trying to develop uniform data. Everybody reports their experiences differently, and everybody's accounting techniques are different. As a result, the information you get back is not comparable and you are in no position to base important programmatic decisions upon it.

One of the major problems that we have in Pennsylvania in trying to get information is that everybody has their own reporting techniques. Almost always, the people who fill out the forms are clerks in little community agenices who may stay on the job for six months and then are replaced. Nobody trains these clerks how to fill out the forms, and so the forms are incorrectly filled out and boxes are left blank. Under the circumstances, the data may be dangerous rather than just unusable because major, system-wide assumptions get made on irrelevant, inappropriate and inaccurate data.

DEVELOPING A COST-BENEFIT INFORMATION SYSTEM IN PENNSYLVANIA

We are trying to come up with a new and better system in Pennsylvania. The state has contracted with a management consulting firm which is performing a major analysis of our system for delivering mental retardation services. One of the components of the group's analysis is the development of a cost-benefit information system.

The need for such a system in Pennsylvania is all too apparent. We now have a combined mental health-mental retardation program which consumes about $350 million a year in state funds—excluding any third party payments such as Medicaid, Social Services, etc. Therefore, we feel that it is imperative that, as the system grows, we are able to answer questions concerning the direction and rate of growth. One of the sales pitches the community programs are sold on is the fact that they are going to eventually decrease institutional costs. However, at present, we have no data to support such claims.

Getting an alternative system in place is going to involve considerable start up costs over a long period of time. We need this time to give us an opportunity to stabilize our institutional system and begin to decrease the institutional population as alternative community situations become available. In the last four years, our institutional costs have gone up at an astronomical rate. We have been hit by in-

At the time of this conference, Mr. Edward R. Goldman was Commissioner of Mental Retardation for the Commonwealth of Pennsylvania. He was formerly on the staff of the Philadelphia Association for Retarded Children. Currently, Mr. Goldman is operating his own consulting firm which specializes in developmental disabilities.

flation, unionization among public employees and similar developments. We have had, in the past eighteen months alone, four salary increases. The largest single personnel component in state government is the mental health-mental retardation system in state institutions, so we feel the impact of pay increases more than anyone else. This means that we can watch as our budget goes up by $35 million in one year and observe no real increase in program output.

Part of our reason for retaining a consultant firm was to develop a system for determining who is being served, what's happening to them and how much it is costing. Later we plan to make assessments of this cost data to determine the most cost-effective programs.

PRINCIPLES OF AN EFFECTIVE MANAGEMENT INFORMATION SYSTEM

The president of an agency that I worked for a long time ago had an approach that he called the KISS system—Keep It Simple, Stupid. If you are talking about an information system, it ought to be so simple that almost anybody who has completed half of his public school education could fill out the appropriate forms. The forms have got to be simple because if they are not, the agencies will not take the time to fill them out. And then you won't have good data to use in determining whether the agency is doing an effective job or not

You are in a bind. You certainly don't want to cut off funding because the forms aren't filled out properly if, in fact, you feel that the agency is providing a meaningful service. So you've got to make the forms simple enough for the agency to want to complete them without a lot of hassle. Also, the information has to have some benefit to the initiating agency. If all the information is going to do is to let the central office staff make plans, then the service agency is not going to care about whether the forms are completed, whether they are done accurately or how quickly the central office gets them.

Let me talk about some of the other principles which must be built into a cost information system. First, the effectiveness of the system has to be defined by output measures. Program standards do not tell us much if we are interested in measuring program effectiveness. You may have a highly polished, well qualified, competent, excellently trained staff; however, the question is: what is that staff or agency producing in the way of measurable improvements for the clientele it serves? Second, human service output measurements have to be client centered. You can't talk about the aggregate effects on a statewide system until you know whether or not any positive changes have taken place in the life of the individual client.

Third, the effectiveness of a human service delivery system must be determined by setting specific performance objectives.

And finally, individual client costs must be recorded and distributed by outcome categories because it is quite possible that you will have a number of service objectives for a given client. The client may be involved in speech therapy, for example, and you will need to measure whether there has been any progress in his verbal facility and articulation. If an individual is non-verbal and at the end of twelve months he can speak one hundred distinguishable words, that is measurable progress. Eventually you wind up with value judgments as to how

much you are willing to pay for an individual client's performance

Given these four principles, there are two important variables we will be attempting to measure: the individual's life situation and the individual's personal development. Life situation can be determined by establishing a range of living statuses, from total dependency to total independence. One state is independent living. For adults, we define this state as less than one hour a day of service provided in residency by persons other than the family or an unpaid roommate. The kinds of settings that qualify as independent living include someone's own home, an apartment, a family home, a boarding home, etc. Then we get down to moderate supervision and we define this state as one to six hours of daily service provided in residency by a person other than the individual's family. Constant supervision is defined as over six hours of daily service, and intensive care and treatment is twenty-four hour service. Intensive care and treatment usually will be furnished in a private institution, hospital, nursing home, state school and hospital, general hospital, etc.

We believe you can measure a retarded person's life state provided that you define what you mean by moderate, constant and intensive supervision. Such definitions are important because they provide a quantifiable yardstick for measuring progress, assuming that one accepts the value judgment that a mentally retarded person ought to live in the most independent setting possible.

Whether the case manager represents a public or private agency, he can measure whether a client has moved up from intensive care and treatment to constant supervision. You can quantify whether an individual has improved his life situation.

The second objective is to measure the client's personal development. The criteria we use in assessing personal development is a scale which ranges from self sufficiency to total dependence. The most convenient yardstick for retarded adults is the individual's earnings. For example, a person who is totally self-sufficient would be defined as one who is employed full-time at the minimum wage or above. A productive, non-self-sufficient person is one who is employed full-time with wages ranging from one-half of the minimum wage to one cent below minimum wages. Even for children we can define what is the most independent state. The most independent state for a child would be full-time attendance in a regular classroom setting with or without additional special help or tutoring. Other levels for children are partially normalized, full-time school attendance. For example, a half-day in special classes would be the next level below full integration in the normal classroom.

We have defined how to allocate costs of activities such as training which are indirect services to the client. For example, how do you apportion training costs within an agency? How do you begin to build such expenses into the system? It may seem very complex but the forms we have developed are reasonably simple and not too time consuming to fill out.

Different levels within the service delivery system will have different information needs. Frankly, as a state commissioner of mental retardation, I'm not interested in whether Johnny Jones has moved from one status to another. The case manager ought to have such information. What I need to know is significant trends in the population my agency is serving. I need to know, given X amount of money, how many people can move from one living state into another and what are

the cost implications of stimulating such movement. If the system will provide information for the individual client manager and agency to observe how clients move through their own individual agency system, then I don't need to know that. All I need to pull out is the aggregate totals which will help me in major systems planning.

Whether this new system works is going to take some time to determine. We are going to be field testing it within the next couple of months in a few locations throughout the state.

IMPLICATION OF COST-BENEFIT INFORMATION SYSTEMS

It's important to recognize that new management information systems can be threatening to old-line professionals because, if the system works, the old approach to standard-setting may become obsolete. What we are talking about is defining a series of goals for a client and deciding what types of resources it will take to reach the desired goals. If someone says that he can toilet train a severely retarded child in six months for five hundred dollars through special programming techniques and another guy says he can accomplish the same task in five minutes for five dollars by waving a rattle in front of the child's face and doing a rain dance, as a program administrator you've got a decision to make. You want the person toilet trained and if the rattle works, are you going to pay $5 or $500? I'm obviously using a ridiculous example, but the principle is the same: it's not how many qualified people are on your staff or how much you pay them, but are you able to fulfill client-centered objectives at a reasonable cost to society?

Obviously, the system is not going to work the way we want it to in the beginning. Most likely we are going to have to tinker and play with it for a while. But it has got some profound significance for our traditional approaches to standard-setting where we talk about so many staff per client and require that serving professionals have a given number of years of training and experience before they can, for example, test and counsel clients. If the system works, it is going to fly in the face of all that. It is also going to be one of the most powerful tools to use in dealing with the legislature.

We are all familar with the fierce competition for scarce state revenues. Everybody wants to get in the pockets of the governor to use new federal revenue sharing funds allocated to the states because each has his own special thing that the legislature won't fund.

The important thing is to be able to say to a legislator, "Look, we have identified 400 children in your legislative district between the ages of 0 to 5 who need developmental day care in order to get into public school. We costed this out and we can take these kids into various developmental programs in order to get them to the point where they are ambulatory, toilet trained, etc. It is going to cost this much." Then you say to the guy, "However, last year we only got money to serve 100 people in your community. Mr. Legislator, how many of your constituents do you want to serve next year? How many of the 400 people do we have to reject?" That's a tough question for any legislator to answer because he knows that he wants to serve all 400 and he has got the data in front of him to determine how many of the 300 have not received services and are sitting home. Given these circumstances, I predict that he'll go to bat for these constituents during the next legislative session.

Right now, unfortunately, most of us go to the legislature, hat in hand, saying that we are going to do good things. The problem is, we haven't measured how much good we have done and really don't know how much it has cost. I think the new cost-benefit information systems I've been talking about are going to be a powerful tool to change this situation. Whether we like it or not folks, we are going to have to move in that direction, because the day of the open money trough is over.

REACTOR

William Sloan, Ph.D.

"SEED MONEY" AND LONG RANGE FINANCIAL PLANNING

One of the problems which came to my mind as Representative Marbut was speaking was the inadequacy of present efforts to lay long range plans for supporting new programs once federal money has been withdrawn. What happens when a new program has been funded with a start-up grant and the state has to pick it up next year? Each year there are new programs that have to be picked up. For example, one might use Developmental Disabilities funds as seed money to start a new service program. You have a one-year grant that may be extended for six months or another year and then there is no more federal money. What are you going to do? People say, "You're a state agency and it was funded through your agency." Even though it was federal funds, they didn't look at where the money originated. The check was signed by your state agency. What are you going to do? Throw these thirty-five kids out in the street? What I'm suggesting is that we need to get some kind of coordination between using money to start up programs and projecting how they are going to be financed in future years.

STATE-LOCAL COST SHARING

A related problem is how do we strike a balance between sharing the burden of financing programs between state government and local agencies. We talk about community programs and we talk about normalization. A good part of local public education costs are raised through local school taxes although they are supplemented by state aid. But costs for programs for the developmentally disabled are somewhat higher than the average per pupil cost in the public schools. The question is how much of this extra cost is the local government expected to bear. In addition, everybody is in the middle of trying to figure out how they can get a chunk of the local share of General Revenue Sharing funds. It is going to be interesting to see in the next year or two what share of these funds the developmentally disabled will get.

THE PROGRAM PLANNING BUDGETING SYSTEM: THE ILLINOIS EXPERIENCE

I want to make a few general comments about cost management systems or the Program Planning Budgeting System. We instituted a PPB system about six years ago in Illinois and went from that to another cost management system. We had reams of PPBS printouts and nobody ever looked at them.

PPBS, as you probably know, started at the federal level with Robert McNamara when he became Secretary of Defense. He applied the cost management

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system used by the Ford Motor Company to the federal defense establishment. I guess it was a great success. I don't think that the defense costs have gone down any but the system apparently was good.

The question is: how do you apply the kind of a cost management system used in industry--where you have a quantitative, objective, measurable product - to the kinds of things that we are dealing with in the human services area. How do you quantify humanization? What is a unit of humanization? How do you know when you have one? How can you measure it? How much does a unit of humanization cost? How do you measure the cost in dollars of the value of having a child in a community-based program closer to home rather than a similar community-based program farther away from home? How do you measure the cost in terms of its value to the parents? These questions become paradoxical when we recognize that there are some parents who don't want their children closer to home.

INSTITUTION VS. COMMUNITY: THE ELUSIVE TRADE-OFF

Another problem is that when you talk about the development of community programs and breaking up the old institutions, you can't start off overnight in shifting funds away from the institution. You don't get the trade off right away, even when you do reduce the population of an institution. For example, in the last six years we have cut the population of two of Illinois' larger institutions in half - from about 4,000 to about 2,000 each. Yet, the total cost of operating those facilities over the period has stayed relatively constant when we correct for inflationary increases. Now, why haven't the costs dropped by fifty percent when the population has gone down a similar percent? The answer is simply that the quality of service has improved. By keeping the same number of employees you have doubled your employee-patient ratio. Then, of course, the budget people say you have got half the population so your costs should go down. They don't look at where you started. They don't look at the days ten or fifteen years ago when operating costs were, for example, $1.96 per day in Oklahoma.

There is a pretty good inverse correlation between the size of an institution and its per diem cost because every institution has a constant overhead that you can't cut down. Besides, you are not going to wipe out the old institutions overnight. You have to keep them going. Even though you are reducing them in size you still want to increase the quality of service; so you don't get the trade off. At least you don't see it and I don't know when you will.

INCREMENTAL BUDGETING

Incremental budgeting is the old hat trick. It used to be at budget time you would come in and the budget people would say to you, "How much did you get last year?" If you were the superintendent of a large institution you might say, "Eighteen million dollars."

"What do you need this year?"

"We need this, this and this."

"How much will that cost?"

"Another five million."

"Well, we will give you two."

"Thank you."

That is the way budgeting was done. Then you took the two million dollars and put it where you needed it most. You bought some new beds or replaced an extractor in the laundry or whatever.

In Illinois, the budget for FY 1974 was made up in the Fall of FY 1972 by the previous governor and his staff. The new governor took office in January, 1973, and he brought his own budget people with him. They didn't like the budget but there was no time to make up a new one so we got a patchwork job. Then the new budget director came out with a public statement that we are going to start with a zero-based budget--i.e., every program is going to have to justify its existence.

It's panic time in Illinois but it's a healthy thing. With the incremental budget system you have some programs that are archaic and should have been wiped out years ago but they just stayed on and you added more and more programs as time went on. Some people have to take a healthy look at what they are doing and how they justify it.

Let's take a look at some of the programs that have outlived their usefulness. For example, the state hospital. The population goes down and down and down. The number of employees doesn't change much: the plant deteriorates; and the cost of rehabilitation rises. The only sensible thing to do is to close it down. So, for a year, there is a committee studying the advisability and feasibility of closing the place. Now, everybody knew before the study group started that the place had to be closed. There wasn't any reasonable excuse for continuing it. But nobody wanted to do it. The Governor of Illinois, who is a brave soul, announced last week that a state hospital was going to be closed by the end of this calendar year. Now he is faced with a bombardment of protests from the labor unions which have 200 members affected by the closing, by the trades people, by the professionals in the community and by the patients' relatives. All kinds of pressures from all kinds of groups are generated in moving toward a zero-based budget.

From the program point of view, there is no excuse for keeping the place open. From the political point of view, however, there are all these pressures which make the decision a tough one. I use this as an illustration because this situation happens on a smaller scale with programs within institutions and within communities.

THE ADMINISTRATOR'S VIEW OF THE GOVERNOR'S BUDGET OFFICE

Mr. Brady pointed out that it takes from three to five years to set up a good program budgeting system. That is the view from the state-house. Across the street in the state office building there is another view. What are we supposed to do in those three to five years? How are we supposed to manage our program and determine what service activities are going to be funded? How are we going to get the budgets we need? That transition period is a hell of a time. Looking over the span of years, the general trend is in the direction of more accountability. But every time there is an administrative change, either in the legislature or in the executive branch, instead of going at a trot you have to reverse and canter. This also makes it difficult.

I empathize with Ed Goldman because the new system in Pennsylvania is going to take some time to set up. If you get a change in administration somewhere along

the line, you are left hanging high and dry. The next legislature or governor just might not think that the old budget system is a very good idea. As I mentioned earlier, that is what happened with PPBS in Illinois. We had stacks of printouts that were of no use to us because the new budget director appointed by the new governor thought that this approach was a bunch of malarkey.

THE PITFALLS OF PER DIEM COST CALCULATIONS

Another comment I would like to make concerns per diem cost. We had a teenager in one of our facilities who had temper tantrums. Using behavior modification techniques, we actually costed it out at $73.00 a day to get the girl calmed down. After that she cost the average per diem. How do you build the cost of the $73.00 a day for about two weeks into your program costs? You can't average it in because it was a unique occurrence.

The other thing that is continually plaguing us in calculating per diem costs is that we are all going away from the institutional model. We are going toward community-based programs and community-based institutions. The usual way of measuring the cost of a program in institutional settings is to take the number of beds occupied and divide that into the operating budget. Sometimes you figure in your depreciation on the capital but that's hard to do. When you go to the community model, the thing you are fighting against is keeping that person in a 24-hour situation. You want a lot of turnover. You get people in and you build them up to a certain point through programmatic efforts and you send them home.

In Illinois, we have a program at one facility where parents are brought in with the child. It is a short-term, 30-day program. We bring the child in with a specific objective to accomplish, such as toilet training. The staff uses behavior modification techniques and the parents work with them so they know how it works. When the parents take the child home, they can continue the contingencies and the rewards.

The thing that plays havoc in this kind of program is that your costs per bed are shot out of the ball park. That same bed might be used by twelve different people during the year. If you take the cost of operating the program and divide it by the number of beds, you have got a cost that is nowhere like what the actual cost would be if you divided it by the number of people who used the beds. This is something that some of the members of the General Assembly find hard to understand. They like to know how many beds are occupied, and they divide that into the number of dollars to get the per diem cost for that program. They do not understand that the turnover is much more valuable than the number of beds.

CONCLUSION

I will conclude by saying that, as in everything, truth is hard to come by. Certainly members of the legislature and the executive branch are plagued by many, many problems. To try to establish communication is not always the easiest thing. It's a two way street. It depends on both parties and in this case maybe three parties. To try to explain programs all over again to a new set of budget people or to a new set of people in the legislature is difficult. Besides, you don't always have one program that you have tried to explain over the last three or four ad-

ministrations because programs are changing. By the same token, the people who have been in the legislature for several terms say, "Well, that's not what you said six years ago."

You would think that legislators who have retarded children would be as sympathetic and understanding as Representative Marbut is. We have a member of the General Assembly in our state who has a son in one of our state schools; it happens to be a 700-bed facility about 200 miles from his home. We built a 400-bed facility right in his community which has units of eight beds to a cottage. He doesn't want his son to go there; he likes the other program. They are doing a great job, he says. He wants to know why we are building these expensive places that are going to cost so much to run and why we don't build more like the 700-bed facility. It is hard to explain to him.

So it is not an easy task for anybody whether you are sitting in the governor's office, in the house of representatives, in the senate or in the state administrator's office. It is a difficult problem. There needs to be some measure of understanding that you cannot take wholesale a system that was developed in one setting—a setting of turning out a certain number of units of a product—and apply it to a program that involves human beings and intangibles—things like normalization and humanization. These are difficult things to cost out, and I think some of you decision makers are going to have to recognize that.

AUDIENCE PARTICIPATION

LEWIS KLEBANOFF, PILD.—We have rising over the Boston skyline the tallest building in New England. It's called the John Hancock Tower but it is not open and most of the glass is covered over with plywood. This great triumph of private enterprise—some one hundred million dollars worth of steel and concrete—may very well have to be dismantled piece by piece before it is even opened because the great private sector, which is much smarter than we poor stupid public officials, just goofed. They've got this damn monolith rising to the sky and towering over Copley Square and sinking into the sea at the same time.

One of the things that troubles me is that when we have prison riots and the prisoners go amuck and tear out the toilets, those toilets are replaced. Why do rioting prisoners get their toilets replaced and the retarded who haven't had them for years have to beg and plead for such necessities. If a storm damages a building, the next morning they are fixing it; there was no money in that account to fix the storm damage; there was no money for the bridge that fell down; but the next morning they are fixing the building and reconstructing the bridge.

I disagree with Representative Marbut. I think that people will pay for high quality services. I wear two hats. One is as a public official. I also publish a magazine for parents and I think we have got to have coalitions not just of parents of the retarded but parents of every kind of disability group. And damn it, there's power there.

The New England Patriots are one of the worst professional football teams on record, but at game time every seat is filled. You can't get a seat to a Bruins game; you can't get a plane seat to Florida in the winter. $150 million is spent annually on vaginal deodorants. I don't believe that this country can't and won't pay. All it requires is some public officials that will stand up to the taxpayers.

It isn't all the taxpayers, after all—it's a couple of articulate people backed by the savings banks in our state and a few other kinds of damn monied interests. They don't anymore represent all the people than we who are interested in mental retardation represent all the people.

I attended a town meeting the other evening where the townspeople were considering whether to allow a community residence to be established for the mentally retarded. A man stood up in the back of the room and said: "Look, I don't know much about mental retardation, but I have a little interest and I have been following this discussion. We have got to allow this home to be opened in our town," he said, "because it is right. We can't say it is right, but put it in the next town."

This was just a simple working man. He had on his work clothes and he got up and said, "Damn it, in the little city of Blubern, Mass., we have to do what is right." I kind of have the naive notion that if we have enough guts to stand up and demand it, that people will do what is right and they will pay the bill for it.

SEN. ERNEST DEAN.—Who should establish the accountability measures by which we are to judge program quality? State legislators or professionals in the field? And if it comes back to the fact that you professionals are the ones that are going to do it, how do we get you to do it and live with it?

ED GOLDMAN—I think it is the clear responsibility of those of us in the field. It is certainly not a simple thing to do. No one has really been able to do it in an effective, systematic way - at least in a large systematic way. The cost-benefit approach strikes me as reasonable. But we are talking about value judgments. What makes a program better? Do we even want to provide services to the retarded or any citizens for that matter? That is a value judgment. We talk about normalization. That's a value judgment. A government official has a responsibility to set policies and these policies are often based on value judgments.

I think we are very close to the development of effective accountability measures in this country. If we don't do it we are not going to get the money we need. I don't think the legislators are going to do it for us because they don't know how to do it either. But they are going to tell us, unless you can tell us why you ought to get more money, then you won't get it. I don't blame them. The free ride is over folks.

REP. GARY MARBUT—I think both legislators and program administrators have a place in developing a viable program by which decisions can be made, implemented and audited. But, as a legislator, I have to say that the key to this decision making process is contained in the U. S. Constitution and the constitution of all the states with which I am familiar. The ultimate responsibility must rest with the legislative branch. Professionals in this field should have heavy input. As you just said, the legislature doesn't pretend to have the expertise to develop the kinds of measurement tools and accountability mechanisms which are appropriate to this particular field. What has to happen is that the group of professionals in this room have to propose an accountability system which is acceptable to the legislature and can be used by the legislature in its traditional and constitutional process of making decisions.

I would also like to comment on the remarks of the gentleman from Massachusetts. Although I am in sympathy with what the gentleman said about the ability of this country to finance human services, I say to you that that is more promise than it is reality. We have a tax system in this country through which people pay involuntarily and people pay involuntarily in a somewhat different manner than they pay voluntarily. As long as that is true I think we have to anticipate that there will be some difficulty in obtaining massive new revenues for mental retardation services from whatever the source. I'd really rather approach the situation in a realistic way than to anticipate that we will receive massive new funding and then be disappointed.

ROBERT HAYES—I have been with the State of New York for the last four years. When the fiscal crisis came in 1971-72, I believe that even if we had had the tools to adequately justify what we were doing in the field of mental retardation, there still would have been mandated budget cuts in our program. At the time, the Commissioner of Mental Hygiene had the guts to write a letter to every member of the state legislature predicting the likely consequences of a decision to cut back funding for programs serving the mentally disabled. However, his efforts were to no avail.

One of the ev consequences of the 1971-72 cutbacks was the prolonged expose at Willo State School which, I'm sure, many of you are familiar with. The fact is that the expose in some ways did exactly what the rest of us couldn't do. It brought great pressure on the legislature and the governor's office and forced positive changes within the system.

Willowbrook State School is still in a mess. I do not think the care and treatment that are being rendered there have really improved, despite the fact that we have sharply increased personnel and reduced the population by 1,000 in a year. One of the negative spinoffs of any expose is that it is very hard to get good people to work in a place that is known as "the last great disgrace."

I am concerned by the fact that many laymen that I have talked to since the dust settled at Willowbrook have said to me: "But now can anything really be done for those people?" We must guard against implanting or reinforcing in the mind of the general public a negative image of the grossly handicapped and very profoundly retarded. This is the thing that worries me in the long range future, especially when I hear people saying the Willowbrook expose worked well and why don't we have one everywhere.

WEIGHING THE COSTS AND BENEFITS OF SERVICES: An Economist Looks at Mental Retardation

Ronald W. Conley, Ph.D.

ECONOMICS—AN INTRODUCTION

Economists are frequently envisioned as professionals primarily concerned with benefit and cost variables that can be measured in dollar terms. It is no wonder, therefore, that professionals in the field of mental retardation are sometimes apprehensive about the conclusions of economic studies. After all, it is impossible to place dollar values on many of the benefits of programs for the retarded.

These apprehensions are based on a misconception of the nature of economics. The study of economics is founded on the observations that there are insufficient resources to provide people with all of the goods and services they desire and that, in consequence, there must be mechanisms for determining which wants, and whose wants, will be satisfied. Economics is, therefore, usually and most correctly defined as the allocation of scarce resources among competing uses.

Scarce resources are usually classified as land, labor, and capital. The "uses" competing for these resources are any activity that promotes an increase in people's well-being. Thus, resources may be used to grow food, or to manufacture clothing and radios, or to provide medical care to relieve pain, or to give rehabilitation services to increase social adaptability, or any other acts that increase people's dignity, security, or capability of enjoying life. The end product of these uses represents the "wants" that people seek to satisfy. These wants include food, shelter, clothing, recreation, physical and mental health, dignity, security, achievement, independence, contentment and personal liberty, etc.

A distinction is occasionally made between "economic" and "non-economic" variables where "economic" variables are those that can be measured in dollar terms and "non-economic" variables are those that cannot be so measured. Such a distinction is fundamentally invalid. All variables that affect well-being will influence the allocation of resources and, therefore, are pertinent to economic analyses. There are no "non-economic" variables. One may, however, distinguish between variables that are relatively easy to measure (usually expressible in dollar terms) and those that are difficult to measure.[1] The stress that is often laid on monetary variables is understandable since they often represent the only reliable available information.

Each type of scarce resource has both a quantitative dimension (number of available units) and a qualitative dimension (the potential productivity of each of these units). The mentally retarded, for example, are a part of our labor resource.

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Their quantity is measured by the number of hours they would normally be expected to work. Their quality is a function of their training, intelligence, physical health, attitudes, etc. Improvements in social well-being are usually obtained by making fuller use of available resources (e.g., reducing idleness among the retarded) or by improving the ability of existing resources to produce (providing needed training, etc.). Rarely are improvements in well-being obtained by increasing the physical quantity of existing resources.

Economics is both a descriptive and a normative discipline. As a descriptive discipline, it seeks to describe why resources are allocated as they are and to measure the effects of this allocation. For example, in my work on The Economics of Mental Retardation,[2] I estimated the size and composition of the social cost of mental retardation and sought explanations for the excess unemployment among the retarded (which would not be a misallocation of resources if the cost of employing these retardates were prohibitive).

As a normative discipline, economics seeks to determine whether the well-being of society would be increased if an alternative allocation of resources were employed. For example, would society be better off if the idle retarded were trained and placed in gainful work and what would be the best method of doing so?

Benefit-cost and cost-effectiveness analyses are frequently utilized and widely publicized tools of economists. Benefit-cost analyses seek to determine if the benefits of a past use of resources, or of an anticipated future use, exceed the value of these resources. Cost-effectiveness analyses investigate the economic desirability of alternative ways of achieving a specified, defined purpose (such as providing educational services to the severely retarded through special education classes, regular education classes, tutors, or some combination of these). In principle, cost-effectiveness analysis, by specifying a target benefit, enables analysts to evaluate only the relative costs of achieving this benefit. In practice, comparisons of alternative services to the retarded require an assessment of differences in both benefits and costs since different programs almost invariably result in different benefit levels.

Most government agencies utilize some version of planning-programming-budgeting systems (PPBS) for purposes of formulating their spending plans. PPBS is best described as applied benefit-cost and cost-effectiveness analysis. PPBS analyses address themselves to the immediate planning needs of agencies and, on the basis of the best available information, draw conclusions as to the most likely effects of different budget levels and alternative methods of service delivery. Often questionable data and assumptions must be employed in order to draw conclusions by a given date. However, these conclusions are, or at least should be, periodically re-examined and modified if indicated by additional knowledge.

Although the terms benefit-cost analysis, cost-effectiveness analysis, and PPBS appear imposing, in actuality, they represent formalized macro-versions of a decision-making process that is part of the everyday activity of people. Each time a person sacrifices a part of a limited budget, whether for something large, such as a purchase of a new car, or something small, such as a haircut, a judgment is made, on intuitive or factual grounds, that the benefits exceed the costs.

In fact, the intuitive benefit-cost decisions made by individuals are, or at least should be, governed by the same criteria as are the larger, more rigorous, more

empirical, benefit-cost analyses conducted for large programs. Among the more important of these criteria are:

* No decision on an expenditure should ever be made without concurrent consideration of the benefits of the expenditure. Occasionally when comparing alternative methods of providing services, it may be determined that benefits are the same under any of the alternatives and therefore, that we need only seek the least cost method of providing the service. For example, a decision as to whether to have laundry facilities within an institution or to contract for laundry services from commercial sources may be based on pure cost considerations. Of course, if there are therapeutic benefits for residents employed in a laundry, the benefits may not be identical between the alternatives.

*Decisions to spend resources are always marginal decisions where the change in costs is compared with the change in benefits. Budgets are, after all, expended in incremental quantities and it is on these increments that spending decisions are made. Of course, many expenditures are routine and little thought needs to be given to their justification in day-to-day operations. e.g., utilities, rent, etc.[3] However, any decision to expand or contract these expenditures should be carefully evaluated (benefit-cost analysis) as should any decision to change the procedures by which certain wants are satisfied (switching from oil to electric heat, using commercial laundries instead of maintaining a facility on the premises (cost-effectiveness analysis)).

*Many expenditures increase both present well-being and future well-being. To the extent they increase present well-being, they are called consumption and to the extent they increase future well-being, they are called investment. In comparing the benefits and costs of these expenditures, we must either subtract present benefits from costs (as is done when clothing, food and other maintenance costs are subtracted from the costs of residential programs to estimate social costs) or, the measure of benefits must consider both consumption and investment benefits.

*All future benefits and costs must be discounted to present value for comparison purposes. Present value represents the amount that people would be willing to pay today for a future benefit. Present values are, of course, lower than future values and are calculated by the formula:

$$PV = P_n/(1 + r)^n$$

Where:

PV = present value
P_n = future value
r = rate of discount
n = nth year

Determining the most appropriate value for it is a controversial and perhaps, from a social viewpoint, impossible task. Most analysts have used a rate between 4 percent and 10 percent or have utilized two rates to represent upper and lower bounds for estimates of present value.

*Finally, spending opportunities, whether for individuals or for programs for the retarded, must be ranked in order of their relative desirability. One reason is that needs and wants invariably exceed available resources and choices must be made as to which needs and wants will be unsatisfied. In

addition, in many cases, one spending opportunity will preclude another. A new facility for the retarded, for example, can be located on only one site even though several may be desirable.

MENTAL RETARDATION—AN ECONOMIST'S VIEWPOINT

An economist approaching the field of mental retardation is confronted with the problems that:

1. Conventional benefit-cost methods are not well suited to analyses of mental retardation. Benefit-cost analysis generally is used to evaluate a specific program at a defined point in time. The mentally retarded, however, are people, not programs. Their abilities and service needs vary widely and these needs may stretch over their lifetime. Ideally, one would estimate lifetime measures of benefits and costs. However, this is a difficult task, both empirically and conceptually.

2. There is an astonishing lack of basic data on many important programs that serve the retarded.

3. There are few clear statements of the goals of programs for the mentally retarded. The oft used terms, "normalization principle" and "deinstitutionalization" are philosophical statements rather than measurable definitions of program results.

To add to the problems of analyses, the term "mental retardation" itself is not precisely defined. The majority of professionals in mental retardation are reluctant to define the condition solely on the basis of IQ because IQ tests are subject to substantial errors of measurement depending upon the conditions surrounding the test and the attitudes and physical alertness of the person being tested; and most IQ tests are believed to systematically understate the intelligence of non-whites, the poor, and physically and emotionally handicapped persons. Moreover, it is argued that persons able to conduct themselves normally in the community should not be labeled as retarded, regardless of IQ test scores.

Therefore, mental retardation has usually been defined on the basis of subaverage intelligence functioning, which originates before childhood and which causes social incompetence. It is the last criterion that causes disagreement.

Arguments against the criterion of social competence are that it confuses cause (the fact of being intellectually deficient) and effect (the lack of social competence) and it obscures the fact that social failure results from the interaction of many factors (racial discrimination, physical and emotional handicaps, etc.), of which IQ is only one, and frequently not the most important.

The arguments against the criterion of social competence appear more powerful than those for it. In my study of "The Economics of Mental Retardation," I utilized a definition based on IQ alone and accepted the usual cutoff point of IQ 70. It must be emphasized that a definition based on IQ alone should be used only for purposes of planning and evaulating services. At a clinical level it is altogether unnecessary and probably harmful to label a socially competent person as retarded, even if his IQ falls into the range designated as subnormal.

PREVALENCE OF MENTAL RETARDATION

When I began my study, the state of epidemiology in mental retardation could only be regarded as calamitous. Relatively few studies had been conducted: in fact, only 9 through 1965. The prevalence rates published by these studies ranged between 1.2 percent and 18.4 percent. Almost no effort to reconcile these differences had been made. Most statements concerning the prevalence of mental retardation ignored these studies and, on the basis of an IQ cut-off point of 70, and assuming that intelligence was normally distributed with a mean of 100 and a standard deviation of 16, asserted that the prevalence of mental retardation was 3 percent.[4]

Most of the differences in the results of epidemiological studies could be explained by differences in the definition of mental retardation used in the studies (IQ level, use of criterion of social competence), differences in methods of collecting data (household survey versus agency survey), differences in methods of identifying the retarded (parental or agency responses or rigorous testing procedures), and differences in the socio-demographic characteristics of the population surveyed. When the results of the different studies were adjusted for these differences, remarkable similarities were found. A household survey utilizing rigorous testing procedures in a rural Maryland county produced results almost identical to statewide agency surveys in Maine and Oregon. Among the more important conclusions about the epidemiology of mental retardation were that:

* Almost exactly 3 percent of the population is mentally retarded.

* Among children, the rate is a little above 3 percent and among adults, because of high mortality, the rate is somewhat under 3 percent.

* Almost 12 percent of the retarded have IQs below 50, a percentage far in excess of that predicted by the normal curve. The majority of these severely retarded individuals are multiply handicapped.

* Among whites, the prevalence of mental retardation is only 1.7 percent and among non-whites, it is over 12 percent.

* Mental retardation is four times more likely to occur among children in the lower social classes than among children in the middle or upper social classes.

It was a fortuitous balancing of the above rates that caused the overall prevalence of mental retardation to be almost exactly that predicted by the normal curve.

As excess mortality among the mentally retarded declines, the prevalence of mental retardation will rise in the future unless this decline is offset by preventive efforts.

ETIOLOGY

The question inevitably arises as to whether the unusually high prevalence of mental retardation among the poor and among minority groups results from genetic differences. The importance of this question can be stressed by noting that if the entire U.S. population had the same prevalence of mental retardation as

upper and middle class white children, the prevalence of mental retardation would decline by 80 percent.[5]

Most informed opinion argues that class-specific differences in the prevalence of mental retardation can be primarily ascribed to the effects of cultural impoverishment (or biased IQ tests) and to an above-average hazard of brain injury due to poor prenatal care, poor diet, etc. For one thing, there are large class-specific differences in the prevalence of severe retardation (IQ less than 50). Severe retardation is usually considered to be predominantly due to brain damage. In addition, most foster child studies show that the IQs of foster children, if adopted as infants, average higher than the population norm, and, in most cases, are far above the average IQ of their natural parents. The issue is confounded by the fact that the IQs of foster children are positively correlated (r .30) with those of their natural parents and not those of their foster parents. Nevertheless, the effect of environment appears to be sufficient to explain existing IQ differences among demographic groups.

PROGRAMS FOR THE RETARDED

Residential care (including public and private institutions for the retarded, and the retarded in mental health facilities, general and chronic disease hospitals, and Federal and State prisons)	$1.6 billion
Special education	1.5 billion
Regular academic education	.7 billion
Clinical care, vocational rehabilitation, sheltered workshops, construction, training, research, agency operating expenses	.5 billion
Income maintenance ("childhood disability" beneficiaries under social security, civil service retirement, railroad retirement, and the veterans administration and mentally retarded beneficiaries under Aid to the Permanently and Totally Disabled and Aid to the Blind.)	.4 billion
Total	$4 7 billion

Such a listing of the costs of major programs for the retarded is useful to program planners who are concerned with the adequacy and coordination of existing programs. It is difficult to imagine a more useful purpose. The cost of these programs does not, however, measure the value of all resources devoted to the well-being of the mentally retarded. Such a total would include the value of all normal consumption expenditures and would probably be in the $20 to $30 billion range.

Another useful cost concept is that of developmental expenditures, i.e., the value of resources used to develop the intellectual and social capabilities of the retarded. This excludes consumption expenditures and is equivalent to the often used term, "investment in humans."

Developmental costs were estimated by subtracting from the above data the following: (1) income maintenance payments; (2) agency operating costs of income maintenance programs; and (3) 20 percent of residential cost expenditures

(to adjust for institutional resources devoted to consumption purposes). The resulting estimate is $4.0 billion if we include research, training, and construction expenditures (and associated agency operating expenditures) and $3.7 billion if we exclude these costs on the grounds that they represent expenditures for future developmental efforts.

This estimate is still low because the value of services rendered by physicians, psychologists, and psychiatrists were omitted as were the value of many social services rendered by State and local governments and philanthropic agencies such as homemaking services, protective services, counseling, guardianship, etc.

Economists frequently utilize the concept of "excess costs." In the present context, this can be defined as the value of resources utilized for the retarded that would be available for other purposes if retardation did not exist, i.e., if all the retarded were within the normal intellectual range.[6] "Excess costs" were estimated by making the following adjustments to the $4.7 billion identified as spent on selected programs: (1) income maintenance payments and 20 percent of residential care costs were subtracted since expenditures on food, clothing, and shelter are normal expenses that are incurred regardless of whether a person is retarded; (2) the costs of special education and regular education programs were replaced by an estimate of excess educational costs since normal education expenditures are not a special cost due to mental retardation. Excess educational costs were estimated at $450 million and reflected the offsetting influences of the higher costs of special education and the smaller proportion of the retarded of school age actually in school; (3) institutional costs were further reduced by $102 million to adjust for normal educational costs.

In 1970, the estimated "excess cost" of mental retardation was $2.2 billion if research, construction, and training are included and $1.8 billion if not.

EFFECTS OF MENTAL RETARDATION

Mental retardation may reduce a person's social and vocational adequacy in many ways. Most such losses, however, cannot be quantified, partly because needed data is not available and partly because we do not know how to place a discrete value on many of the effects of mental retardation, especially those intangible values that reflect moods and feelings—the loneliness of the retarded, the sorrow of parents, etc.

For 1970, the following estimates were made:

* If the mentally retarded in residential care had the same employment and earnings rates as their non-retarded age and sex counterparts, their total earnings would have been about $.7 billion.

* If the non-institutionalized mentally retarded had the same employment and earnings rates as their non-retarded age and sex counterparts, the increase in their earnings would have been $3.4 billion.

* If the percentage of retarded women with IQs below 50 who were occupied as homemakers were the same as for non-retarded women, and if a homemaker's services were valued at 75 percent of what women earn in remunerative employment, then the increase in the value of homemaking services would have been $.4 billion.

* Unpaid work, other than homemaking services, performed at home (e.g., house and garden maintenance) or away from home (volunteer work) would have increased by $ 3 billion had the retarded with IQs below 50 performed these services at the same level as the non-retarded population (it was assumed that there was no loss of homemaking services or of other unpaid work among the mildly retarded).

The value of the total loss of gainful activity (loss of earnings, homemaking services, and other unpaid work) due to mental retardation was estimated at $4.8 billion in 1970. If to this total, we add the $2.2 billion that was estimated to represent the "excess cost" of programs for the retarded, the resulting total, $7.0 billion, is an estimate of part of the social cost of mental retardation, i.e., the loss of well-being due to mental retardation.

SOCIAL ADJUSTMENT

The conclusions that were drawn about the surprisingly high vocational success of the retarded are far more important than estimates of social costs. On the basis of 22 follow-up studies of the employment of the retarded, and 19 follow-up studies of earnings, it was concluded that:

* 87 percent of mildly retarded males of working age are employed at a point in time, a figure only four percentage points below the norm for adult males.

* 33 percent of mildly retarded females are employed at a point in time, twelve percentage points below the norm for adult females. This large percentage difference apparently does not reflect vocational failure as much as a tendency for married mildly retarded females to stay home and keep house rather than seek remunerative work.

* A majority of both mildly retarded males and females marry and maintain stable families.

* Earnings of the mildly retarded are also high, being slightly in excess of 85 percent of the population norm for both males and females.

* About 45 percent of adult male retardates with IQs between 40 and 50 are employed; only about 12 percent of females in this IQ range were employed. Earnings are estimated to be only 20 percent of normal.

* Below IQ 40, employment is infrequent.

These conclusions are at variance with those of most follow-up studies which usually find much lower levels of employment and earnings. This is largely due to the fact that most follow-up studies have been conducted shortly after the mentally retarded left school and while many were still in their teens. Employment and earnings are low for all teenagers, not just the retarded.

When vocational failure did occur among the mildly retarded, it appeared usually to be a consequence of the combination of mental retardation with physical, emotional, or attitudinal problems, rather than mental retardation alone. In fact, it is probable that gainful work is always possible for persons with IQs above 40 unless precluded by the combined effects of additional handicaps. The poor employment record of persons with IQs between 40 and 50 appears to be largely due to failure to provide needed vocational services.

VALUE OF PROGRAMS

It was estimated that a mildly retarded male, age 18 in 1970, could expect to earn $503,000 over his lifetime (as compared to $764,000 for non-retarded men) (this estimate assumed a 2.5 percent growth rate of earnings and mortality rates that were 25 percent above the norm). The estimated future lifetime earnings of moderately retarded (IQ 40-49) males were $62,000 (mortality rates were assumed to be twice the norm). Unpaid work is not included in these totals. The estimated lifetime earnings of women (including the estimated value of homemaking services) were much lower, being $291,000 in the case of mildly retarded women, and $39,000 in the case of moderately retarded women. These lower figures reflect lingering labor market discrimination and probably an understatement of the value of homemaking service.

This substantial success of the retarded is dependent upon their being afforded opportunity for intellectual and social development in childhood, and supportive services, if and as needed, as adults For retardates who are not institutionalized, by far the most important of these services in terms of resources cost is education, whether in special education classes or in regular education classes.

If the future earnings of the retarded are discounted at 7 percent, and divided by the discounted value of the estimated cost of their education, then the resulting ratios range from 4.3 to 1 to 8.3 to 1 for mildly retarded males depending upon whether all of their education was in special education classes, or all was in regular academic classes, or some combination thereof. For mildly retarded women, the ratios ranged between 2.5 to 1 and 4.8 to 1 (if the value of homemaking services is included)

These ratios would be greatly increased if other benefits of education - unpaid work, reduced crime, greater psychic well-being, reduced institutionalization, etc. - were added to the numerator.

In the case of the moderately retarded, these ratios failed to exceed the critical value of "1" which probably reflects the past inadequacy of educational and vocational services to this group.

FUTURE NEEDS

One clear need in mental retardation is a greater emphasis on prevention. If the entire population had the prevalence of persons with IQs below 50 as the children of middle and upper class white, the number of persons with IQs in this range would have declined by about 55 percent or by about 133,000 cases in 1970.

A second need is to provide community residences for the retarded that will enable them to live away from home with supervision limited to their individual requirements. Group homes with varying amounts of supervision will probably be the primary means of meeting this need. It is probable that over 200,000 adult retardates could be placed in group homes some of whom are currently in residential institutions but many of whom continue to live with their parents or other relatives. Many retardates, living at home, would gladly opt for a semi-independent life in a group home if such facilities were available.

A third need is to place more emphasis on employing the retarded. Among the suggested changes are: (1) vocational rehabilitation agencies should develop an outreach program for adult retardates. Despite the great emphasis that has been placed on rehabilitating the retarded, the majority of retarded clients are referred to VR agencies directly from special education classes. Older retardates in need of VR services are less likely to be referred to VR agencies and, if referred, are less likely to actively seek out assistance; (2) sheltered work opportunities should be opened up in regular places of employment by re-engineering jobs, paying below standard wages, if necessary, shortening working hours, providing special supervision, etc. The immense diversity and productivity of American industry assures that retardates so placed will normally earn far more than they could earn in sheltered workshops.

A fourth and final need is to eliminate poverty among the retarded. In part, this can be accomplished by finding employment for many retardates. When this fails, income maintenance payments should be increased considerably above current levels.

Finally, institutional reform is long overdue. Institutional life should not be synonomous with degradation and poverty.

COST ACCOUNTING

Programs for the retarded cost money. This money is not joyfully given, regardless of whether it is derived from public funds, fees for services, or philanthropy. In general, programs for the retarded are not liberally budgeted.

The critical importance of cost accounting stems directly from these simple observations. Cost accounting serves these major purposes:

1. To explain program operations and the purposes for which funds are used.

2. To improve internal program efficiency by enabling careful examinaton of each cost item to see if the services could be performed or obtained at less expense through a change in operating procedures.

3. To provide a basis for evaluating the effects of a program to ascertain if it warrants expansion, or contraction.

4. To assist in comparing alternative ways of providing services to ascertain which alternative achieves the stated purposes at the least cost.

The last three purposes represent, of course, benefit-cost and cost-effectiveness analyses and can be combined under the more general term "evaluation."

We can expect that cost accounting methods will become increasingly refined in the future as greater stress is placed on evaluation in order to improve internal efficiency, to measure program effectiveness, or to compare alternative programs. These evaluation efforts will be greatly assisted if cost accounting procedures develop along the following lines:

1. Concurrent with improving cost accounting methods we should develop a system of "output accounting," i.e., a detailed accounting of what is achieved by each expenditure. For example, one should not look at a food budget without also considering the nutritional value of the food that is purchased, its variety and its

appeal. A low laundry charge is no virtue if residents wear soiled clothes or sleep on dirty linen. In short, for any expenditure, there is, or should be, a desirable effect that is identifiable and measurable.

The overall impact of each program on well-being should be meticulously identified and measured. An institution does not merely provide residential care. It provides a life style whose quality may be judged by the clothes clients wear, the food they eat, the condition of their living quarters, the amount of community contacts they make, etc.

Rational evaluation and decision-making is simply not possible in the absence of knowledge of the various effects of expenditures.

The development of an "output accounting" system should not be impeded because outputs cannot always be expressed in monetary terms. In fact, most output variables will need to be expressed in non-monetary terms. In consequences, many benefit measures will be non-additive. How does one add together a twice weekly change of sheets and nutritious and appetizing diet. Nevertheless, identifying and measuring these positive effects of program expenditures would greatly improve decision-making processes.

2. Standardized data items for cost variables and output variables should be developed and, insofar as possible, utilized by as many facilities as possible and continued in an unbroken series over time unless clearly superior data items are substituted. Such standardization is essential if cross-validation of evaluation results is to occur and if comparative evaluations are to be undertaken.

3. Cost accounting usually identifies expenditures according to conventional budget line items such as the salaries of various classes of workers, provisions, rent, etc. Evaluation, however, requires that expenditures be distributed along functional lines, food service costs, dental costs, educational costs, clothing costs, etc. Cost accounting items should be developed along functional lines. Of course, a highly detailed cost accounting system will distribute the conventional items among the functional items.

4. The development of a functional list of cost items will face the problem of joint overhead costs. Expenditures on janitorial services or heating, for example, must be allocated among the various departments in a facility. Although a number of allocation schemes have been suggested, it is often preferable to report the information in its whole form, and leave the allocation, which will be arbitrary at best, to those persons who undertake subsequent evaluations based upon the data. Some allocation of manpower costs will, however, be unavoidable.

5. Some data items, in both output and cost accounting systems, will be difficult and costly to collect on an ongoing basis. In these cases, the information should be periodically collected in representative samples. Such sample information can alter a high degree of accuracy, often exceeding that of carelessly completed universe reporting.

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[1] It should be noted that there is no such thing as a non-measurable variable since if it can be defined, it can be operationalized. It may require a considerable effort to do so, however.

[2] Ronald W. Conley, The Economics of Mental Retardation, (Baltimore: The John Hopkins Press, 1973).

[3] It is not necessary to make a distinction between fixed costs and variable costs. Fixed costs are periodic payments over which management has no control. The loss of benefits (legal action, inability to operate business) from failure to pay these costs are sufficiently large that only dire financial straits or a decision to cease operations can justify non-payment.

[4] The information cited in this paper is taken from my book, The Economics of Mental Retardation.

[5] This estimate is based on a comprehensive epidemiological survey in one Maryland county in which .64 percent of the children of middle and upper class whites are retarded. These findings are consistent with other studies.

[6] One could consider another situation where the retarded were suddenly removed from the face of the earth altogether, thereby reducing the population. Although not discussed here, this case is not as far fetched as first appears since prevention of mental retardation occurs by preventing the birth of children known to be, or at high risk of being, mentally retarded.

PROGRAM BUDGETING IN A MULTI—SERVICE CENTER FOR THE HANDICAPPED

Tom S. Frasier

THE ACCOUNTABILITY MOVEMENT

Accountability is the watchword today. We are at a point where local, state and federal officials are demanding some answers from us. It is our job to prove whether or not we are doing anything and, if we are doing something, what it is and whether or not it makes sense in terms of the amount of money that we are spending to do it.

As you discuss program planning and management systems, management by objectives and accountability systems, you should never overlook the very core of the issue - i.e., any system we design must be client-oriented. If the system is not designed to specifically relate to the individual, and the services delivered to him, then it isn't worth a damn.

On the other hand, the reality is this - we need dollars, we need cooperation, and we need people to understand the goals of our programs. The time has long since passed when we could go before a committee of the state legislature, a federal agency or any public or private funding body and say, "We need $100,000 next year to run a program for the retarded."

"What are you going to do?"

"We are going to help kids."

It just doesn't go any more. It doesn't wash now, and it probably shouldn't ever have.

DEVELOPING A MANAGEMENT INFORMATION SYSTEM

I believe that we are on the brink of developing some really fine services for the people of Arkansas. We are reaching a point now where we can furnish some answers based on relevant data.

My colleague, Jack Stout, and I came to Arkansas a year and a half ago. We recognized at the time that the community centers for the retarded throughout the state had limited tools with which to justify their service programs to their clients, relatives, the Arkansas Legislature and the State Developmental Disabilities Office. So we began working to develop a system. Actually, to be quite frank with

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you, when we started out, we had no intention of developing a system. We were working with the Jenkins Center in Pine Bluff, Arkansas. They were having a dissenting dialogue with the State Office of Developmental Disabilities and the Welfare Department. Jenkins was pursuing this dialogue because state officials from different departments were saying, "Look, we've got some Title I money in your center, we've got some Title IVA money there, we've got some DD-MR money, we've got some state money and we've got some local money, and we're just not sure exactly what services those dollars are being used for, and for which people. And, as a matter of fact, we suspect that there is some duplicative funding." As a result, several state agencies were reluctant to maintain or increase their support for center programs.

Because of this situation, Jack and I went to work to help the Jenkins Center get the information necessary to answer questions concerning the programmatic purposes for which dollars were being spent. Eventually, we got to a point where we could draw a picture of a child on a blackboard for the Department of Education, for example, and tell them, that this portion of the child's expenses were being met with their money; simultaneously, we described the services which he received for those dollars. This was the kind of graphic description that the funding agencies needed to make appropriate decisions.

Incidentally, as we went along, we found out, by accident, that the kind of information we were developing within the Center was the kind of information that the director needed to make internal fiscal and programmatic decisions. This discovery proved particularly important at the Jenkins Center since the director's philosophy was great but his administrative abilities were lacking in some key areas.

The internal management information system we developed at Jenkins Center has been in operation now almost one full calendar year. We call it the Jenkins System, quite obviously, because it was first developed at the Jenkins Center for Children in Pine Bluff, Arkansas. The system gives the director the kind of answers that he needs to direct his program and the kind of output that he needs to justify his program to funding agencies. Let me review for you some of the essential ingredients of this approach to analyzing program and budget data.

THE JENKINS SYSTEM

Traditional budgeting procedures have, in the past, discouraged the mixing of clients whose service costs were paid from several different funding sources. Client placement has often been determined more by the needs of the funding mechanism than the needs of the clients. Many local, state and federal administrators have been reluctant to commingle funds from several sources. This reluctance is understandable in the absence of administrative information and budgeting procedures which would allow those responsible for fiscal accountability to demonstrate with complete accuracy where, for whom, and for what the specific funds were being spent. Not only have clients of service programs been systematically segregated on the basis of their respective source of funding, but also services have been segregated to some extent for the same reasons. One funding mechanism may be, for example, to provide for remedial training and behavior modification but not for special education services. Another funding mechanism may provide for special education services but not for

physical therapy. And still a third may provide for the direct medical costs involved in prescribing physical therapy but will not support special education services, remedial training or behavior modification. Finally, private donations may be earmarked for only one service, such as teaching deaf children how to talk

With the traditional line item budgeting system, persons responsible for guaranteeing that certain moneys are spent in certain ways and only for certain types of clients have virtually no way of proving that their monies were spent appropriately. Nor can they determine that duplicate funding was not involved.

With the Jenkins System, however, these problems are virtually eliminated. Dollars can be traced on a per client, per service basis. By way of illustration, we can tell that Johnny Jones had two service units of speech therapy June 13 and how much it cost to deliver that service - not only in terms of actual personnel costs, equipment, etc., but also in terms of volunteers and any shared equipment costs. So we come up with program value and program cost, which happens to be a very powerful tool when dealing with the legislature and funding agencies. Persons responsible for monitoring various funding agencies can easily verify that the funds for which they are responsible, in fact, were spent in accordance with their respective regulations and guidelines, goals and priorities.

In terms of service delivery, this means that a comprehensive service program can be created and managed effectively. Client placement can be determined solely on the basis of professional assessment of the client's needs rather than on the basis of some extraneous funding consideration which has nothing to do with what might be best for the client.

By sharing facilities and staff in combinations that will produce the most efficient package of services, a more effective utilization of the available resources can be achieved. This feature is of particular importance in applying federal funding regulations in rural communities where the setting up of a separate program for each funding mechanism simply isn't feasible. By assessing costs of service delivery for each program component, agency operators as well as state level supervisors, legislators, consumer groups and federal auditors can begin to compare, on a rational basis, the costs of the services that they are purchasing.

Until recently such a sophisticated management information and program budgeting procedure hasn't been available in a form sufficiently simplified for widespread implementation. The Jenkins System has been deliberately designed with both the sophistication and operational simplicity necessary for widespread application.

IMPACT OF THE JENKINS SYSTEM

Let me tell you what this has done for the Jenkins Center. The Center is a multi-service program serving one hundred and fifty clients "in house," and two to three hundred clients per month on an "out client" basis, including children who are deaf, mentally retarded and cerebral palsied. Recently, the Center received a contract from the League School in Brooklyn, New York which will permit the staff to add services for emotionally disturbed children.

The new management information system has given the Center's administrator some real decision making tools for the first time.

He doesn't have to be a super administrator; he doesn't have to have a lot of those tools inherent in his own experience. He can now obtain the needed answers from his service program category coordinators. These people who are responsible for specific kinds of services that are delivered to the children, can provide concrete data on such questions as: what is the staffing pattern; what is the program emphasis; what kind of problems are they addressing; which kids are they seeing everyday; and where is the money going.

If, for example, you decide that your primary goal is to improve the communications skills of your clients and suddenly you find out that only one percent of your budget is going for that kind of service activity, you need to either change your goal, or put more dollars into the realization of that goal. Planning, staff configuration, and the kind of decisions you make are made much more readily by having the kinds of information that are available through a good management information system. Service unit costs for each child vary every month because of the difference in staffing patterns, the difference of equipment purchased, etc.

IMPLICATIONS FOR THE FUTURE

I might add that we plan to integrate a more sophisticated client tracking system next. Our present system tells us where the client was, who served him, how many dollars were involved and basically what sort of results were achieved. With a good client tracking system we would be able to attach the dollar figure to the behavioral changes. In this way, we could say that Johnny Jones entered the program July 1 at a certain behavioral level. We served him until the following December at a total cost of $496.10. We could identify the professional staff and equipment which were involved in delivering these services and the behavioral changes which took place as a result of the services delivered.

That is the kind of information that is going to be necessary to convince state legislatures and funding sources that what they are buying makes sense. We must have convincing evidence that the product is worthwhile, in terms of the dollars that are being paid for it. That kind of accountability is necessary at all levels.

Let me close by saying that when you introduce a system that tells you what your staff is doing, for whom, at what cost, and with what kinds of results, it can be a very threatening experience. Those of you who are moving into this area of experience had better realize that there are going to be people that are resistant to this kind of change. They are not just resistant because it is a change, but because it makes performance accountability a reality for them. For the first time, what they are producing, the kinds of dollars they are spending and what's happening with the clients whom they are serving is really going to be measured and they will have to be responsible for their work. So, implementation of a comprehensive management information system which is totally client-oriented and based on a client advocacy philosophy may be threatening , and it may be difficult, but I think it is worth the cost at any price.

COST ACCOUNTING WITHIN A PUBLIC RESIDENTIAL FACILITY FOR THE MENTALLY RETARDED

Norman B. Pursley, M.D.

Each of you has received a copy of the FY 1972 per diem analysis for Gracewood State School and Hospital.* I invite you to take this report home with you for a better review than time now allows. As you look at this document later, I expect that three questions will come into your minds: (1) Why has this report been prepared; (2) How was it prepared; and (3) What is the information used for. In the next 20 minutes I hope to answer these questions for you, not comprehensively, but well enough to provide an appreciation of why I support this undertaking at my institution.

NEED FOR INSTITUTIONAL COST ACCOUNTING

I will begin with the question concerning our reason for preparing this formal cost accounting report. For over twenty years I have served as superintendent of a public mental retardation facility. During most of those years, I didn't need to concern myself with being answerable for how I spent the public dollar. I don't mean to imply that we didn't feel we had to do a good job, but there was no structured mechanism for accountability imposed upon us. Part of the reason was that it took all the money we had to provide the basic necessities such as food and shelter for those in our care. In the 1960's, however, a reform movement in the field of retardation and other human service areas brought on a demand for improved conditions and new programming. Tax dollars became more abundant, but they also became more competitive as each new program demanded its share of the limited financial resources. We soon found ourselves being required to justify and account for each dollar spent. The once simple budget process became sophisticated and we were hard pressed as managers to meet the demands it placed upon us. It no longer sufficed to make money decisions based on minimal cost information; too much was at stake. Alternatives to institutional care emerged; new institutions were constructed; standards were established. In short, managerial sophistication and technology had combined to all but overwhelm the practices of the past.

Recognizing the necessity for better financial and managerial information at the institution, in 1970 we expanded our staff to include a management analyst directly responsible to the superintendent. The first project given him involved the development of the report you now hold. This decision to prepare a more comprehensive cost accounting system seemed imperative in light of our informational requirements.

Norman B. Pursley, M.D., is Superintendent of Gracewood State School and Hospital in Georgia, a position he has held for 22 years. He has recently initiated a unit-by-unit cost accounting system at Gracewood as a tool for improved management.

COST FINDINGS TECHNIQUES

Once a decision had been made to develop a cost accounting system, four key questions emerged relative to the format of the final report. What would be the focal point or cost center used in the analysis? What time period would the report cover? How would costs be represented in terms of the cost center? What degree of accuracy would be feasible and acceptable?

The answer to the first question became apparent almost from the beginning of our discussions. We knew we wanted information which could be used for cost comparisons internally and with alternatives to institutionalization. Cost of care per resident was the obvious common denominator and we chose this as the focus of our system. At Gracewood, residents live in cottages reflecting homogeneous groupings. For this reason, each cottage and each ward was established as a cost center; that is, all cost would be allocated to the resident by living area.

The second question—what time period should be used—required more consideration but became obvious when all the facts were examined. Ideally a cost report should be available as soon as possible after the expenditures occur so that internal controls might be applied to wayward costs. However, there are some trade offs to be made between the value of receiving timely information and the costs associated with preparing it. In our case at Gracewood, timely information was not readily available. The state accounting system was not geared toward rapid consolidation and reporting of costs. Consequently, it was not feasible for us in preparing a monthly or even quarterly cost analysis without prohibitive effort on the part of our accounting department at Gracewood. We decided, therefore, to base our cost report on an annual accumulation of costs corresponding to the state fiscal year. These annual preparation criteria could draw on state financial audits as resource documents and would correspond to the annual per diem established for other state institutions.

The third question to be answered dealt with the method selected to represent costs. There are a variety of cost classifications which could function appropriately within a given per diem reporting format; for example, direct care, medical support services, physical support services, administration or simply fixed, variable and overhead costs. For Gracewood's purposes, the selected cost designations had to serve two purposes. First, they had to be recognizable—that is, our staff needed to be familiar with the terminology in order to make it meaningful. Second, it needed to be consistent with the sources of financial information available to us. We did not wish to create work by forcing data already available into a totally different reporting format. It was decided, therefore, to express costs in categories based on our internal budget units. Traditionally, Gracewood's budget units have corresponded to the organization of the institution. For this reason, they were the ideal choice in meeting the criteria of familiarity and availability.

Gracewood has two major organizational divisions charged with direct care responsibility. One of these is Cottage Life. Page 25 of the study, for example, reflects the per diem for a cottage within this division. Note the description at the bottom of the page. This has been included to provide a basis for comparison. I am sure each of you has a living area for residents with similar characteristics.

The cost categories at the center of the page reflect the organizational structure of the institution as described above. This choice allows each division or depart-

ment head to see his efforts reflected as a per diem charge. The approach is particularly valuable in comparing departmental services among the cottages. I will refer to this more as I relate our uses of the report to you later in my presentation.

The final question facing us in 1970 concerned the degree of accuracy to be accepted in allocating costs. Here again, trade-offs between accuracy and costs in time and effort were determining factors. At Gracewood, personnel costs represent almost 80 per cent of our total annual budget. It would seem imperative then that such costs be reflected with substantial accuracy and ideally we set this as our goal. However, it soon became obvious that not all personnel services charges could be treated the same. By their nature certain types of costs defy easy allocation with a high degree of accuracy. For example, how does my salary relate to a resident in a given cottage. A sophisticated cost system might allocate this expense across all areas of the institution as an overhead charge and then indirectly reflect it onto the living area. Such a treatment has conceptual appeal, but in a practical sense, lies well beyond our ability and time. The marginal gain in accuracy provided by sophistication is exceeded by the costs to us in obtaining it. Many of our costs, therefore, were allocated directly to the resident as an equal per resident charge.

There were other costs, however, for which accuracy in allocation was an achievable goal. Fortunately these included the larger portion of the total personnel services cost and also represented those operations which were most responsive to changes in managerial policy.

You may have already noted that the first line on page 25 ("Cottage Life Direct Care Personnel") represents the single largest expenditure among the defined categories. This cost reflects all attendants, LPN's, and RN's assigned to the living area during the fiscal year under consideration. We make a great effort to obtain accurate personnel listings for each cottage as the omission of even one attendant would substantially alter the direct care per diem. State payroll records are reviewed to make certain that the correct salary is allocated. This high degree of accuracy better enables us to evaluate the effects of census and staffing changes occurring within the year. It also gives us a larger degree of confidence in the overall per diem for the cottage.

Training and Recreation is another cost category in which an extra effort is put forth to obtain accuracy. All classroom teachers' salaries are allocated to those cottages from which their students come. Those teachers with a unit or cottage assignment are also allocated only to those areas. Recreation personnel services are similarly treated. As a result we have achieved an accurate representation of costs for an area which substantially dominates program costs. Comparisons within this category reflect our emphasis on programming for differing levels of age and retardation.

Food Service also represents a large component of the overall per diem costs and those expenses have been determined with the greatest feasible accuracy. Costs per meal include raw food, cooking and serving personnel, and all food service supplies. Cost comparisons in this category are useful in pointing out the economics involved in volume vs. specialized food preparation and service.

I could go on to explain our approach to each of the defined cost categories; however, I hope that I have already provided you with a sufficient appreciation of our costing techniques. In brief, we have accurately identified those costs which can be directly related to the resident and allocated them accordingly. The remaining costs have been allocated equally per resident. In both cases we made the choice of treatment based on the value of increased accuracy vs. the cost in time and effort to obtain it.

USES OF COST INFORMATION

So far I have told you why we initiated a cost reporting system and how we went about preparing it. Now I would like to relate some of the uses we have made of it and some we hope to do in the future.

Earlier in this presentation, I mentioned our desire to develop data which would be useful in comparing our costs with the costs of alternatives to institutional care. We know the per diem charge for foster homes in Georgia is $4; group homes are expected to cost $10, and nursing homes average a $13 per diem. Through the per diem analysis, we can compare the economies of these placements with our costs for an individual resident. Frequently in the past, resident placements were viewed as economical if the alternatives were cheaper than our average cost. This conclusion could have been erroneous given that the actual per diem at Gracewood ranged from a low of $12.43. A placement from this least expensive area, if evaluated at our institutional average per diem of $20.15, would provide a misleading economic comparison.

We also hope to use our per diem costs for comparisons with other residential facilities. I have not yet seen similar cost reports from another institution, but I look forward to the opportunity to make a detailed comparison when one becomes available. I would hope to learn a lot about your institution from such a report. I would also hope to recognize those areas where you may be providing more services for each dollar. In general, the interchange of similar per diem data should enable all of us to benefit from the other's experience.

Perhaps the greatest potential of our per diem report lies in its use as an internal management tool. Note that I said potential, for I must admit that we have yet to take full advantage of the information available. In the time I have remaining I would like to relate to you first, the benefits we are realizing, and second, those we hope to achieve.

Our primary use of per diem information has been in recognizing the effects of policy changes on cost. We have now prepared three annual cost reports. With each additional year we gain new insight into cost behavior at the institution. As an example, look at the comparison of the direct care category on page 8 of your report. Since this area was investigated with great intensity, we have been able to substantiate and identify the factors contributing to cost changes. Any one cottage could be isolated and examined, but for now, let me generalize on some of our findings. Cost increases result from three types of change—salary increases, staff increases, and census reductions. Our state merit system has built in salary increases which are generally predictable. Because of this we are not overly concerned with a cost increase falling within the range of salary increments. However, a radically different cost increase can be attributed to either or both of

the remaining factors. During the three year period of the report, we were expanding staff for small groupings of residents and reducing census to reach our certified bed capacity. As a result, we frequently experienced some of the larger increases reflected on this page of the report. Through the per diem analysis, however, we feel more able to defend and explain the cost increases. We can also say with confidence that it is not a trend, but rather a reflection of a shift in managerial policy in the direct care area.

Our second major internal use of the report has been in cost control. This is also the area where we have the most work still to do. A powerful tool is not easily wielded without experience and our experience is still very limited relative to the potential of our information. We have been able to influence some costs, however, and I would like to cite for you one example.

In FY 1970, the year of our first report, social services resulted in the per diems shown on the insert to your report:

Living Area	Per Diem
Cottage 5	1.010
Cottage 1	.817
Cottage 23	.453
Cottages 10, 28, Motel	.257
Unit IV	.136
Unit I	.121
Unit II	.096
Infirmary, 19, C-Wing	.084

Since these costs were based on social worker assignments, the wide range of costs represented a management decision and not an uncontrolled variable. We asked ourselves several questions as a result of these costs. Is the range of costs actually a reflection of our social service priorities? Is social service 12 times more valuable in Cottage 5 than in the Infirmary? As a result of questions like these, we re-examined our assignment of social workers and established a more equitable distribution of costs and services. This is only one example of the use of per diem information in cost control.

As my final comment, I would like to relate to you our plan for expanding this function. We are on the verge of obtaining a new and more powerful computer. Through its capability we hope to produce a monthly per diem report without sacrificing any of our present accuracy. The timely receipt of this cost information will reflect immediate changes in per diems resulting from changes in controllable variables. Our management can then act quickly to correct poor decisions in any cost category. We also hope to obtain comparable cost data from other facilities for the retarded. From these a pattern of costs should emerge to which we can compare ourselves.

CONCLUSION

As state program coordinators, you will face increasingly complex decisions relative to developing and utilizing alternatives to institutional care. Identifying per diem costs can be a tangible benefit to you in evaluating the economics of these

alternatives. I highly recommend to you the implementation of a standardized state-wide per diem reporting system as a tool for better program planning and realistic evaluation.

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* FY 1972 Per Diem Analysis, Gracewood State School and Hospital, Gracewood, Georgia.

MEASURING THE COSTS AND BENEFITS OF ALTERNATIVE SERVICES FOR THE MENTALLY RETARDED

Arthur Bolton

Arthur Bolton Associates conducts public policy research in the human services field. Much of our work during the past several years has been concerned with statewide systems for the mentally retarded.

We have designed mental retardation programs and enabling legislation in California, Hawaii, Missouri, and Illinois. We are currently active in Pennsylvania, Nebraska, and Indiana.

Until recently almost all of our work in the retardaton field concerned the design of community service systems--alternatives to the traditional state institution. These efforts have been founded on the assumptions that services in the community are more desirable and less costly.

Such assumptions are not difficult to support. Studies of comparably handicapped persons can be produced to verify the contention that "community is better than institution," and idealogical concepts such as "normalization" can be used to support the expansion of noninstitutional programs. Furthermore, comparisons of institution and noninstitutional costs by mental retardation program leaders almost always seem to favor the community program. But these comparisons generally fail to include the "hidden costs" of special education, public health, welfare, and other supportive programs in the community, because these costs are part of some other agency's budget, the fragmented--agency-by-agency--budget used in most states is simply a mirror image of fragmented programs.

The fact is that very few large systems--or even small ones--produce good cost information. And very few programs produce reliable information about the results of their work. Nobody is systematically relating good cost information to reliable outcome information.

During the last few years the content of our work has been changing in response to a new generation of questions: Legislators are now asking: why do the costs in our state institutions continue to rise despite the big investment we have been making in community programs? We were told state costs would go down if we developed community programs.

Some parents of the retarded are asking: How do we know that the community program is better for our children? Wouldn't well funded institutions be better--at least for the severely and profoundly retarded?

Arthur Bolton is President of Arthur Bolton Associates, a management consultant firm in California. Mr. Bolton is the former director of the California State Assembly Office of Research. During this time he played a key role in the establishment of California's regional center program. For the past several years, he and his firm have been involved in studies in various states to determine more effective methods for delivering services to mentally retarded and developmentally disabled clients.

Those who fund and operate community programs are asking: Which services are most effective? We only have so much money and everybody wants more than we can provide--how do we decide? What basis do we use for establishing priorities?

The vague assurances and assumptions of service professionals are no longer sufficient grounds for continued public expenditures. Legislators who authorize and fund these programs, administrators responsible for management and spending and an inquisitive taxpaying public want to know what they are buying. They need and deserve to be shown results.

Agency administrators and staff also need a sound empirical basis for decisions concerning staffing levels and mixes, service methodology, and appropriate application of agency resources. We believe that such decisions are best made on the basis of reliable and consistent information regarding the relative costs and measured results or benefits of human services.

I plan to summarize a useful approach that we have been developing to produce cost-benefit information for decision makers.

The credit for having invented the system goes to Dale Carter, our director of research, and to Dr. Frank Trinkl, one of this country's outstanding econometricians and policy analysts who has given us consultation and technical assistance during the past two years.

In the time permitted, I can only outline the framework of a system. Our approach is based on four principles:

1. Effectiveness is defined by output measures. Often, evaluation efforts assess performance by relying on "process indicators" such as caseload, staff qualifications, accessibility, staff-client ratios, hours of service delivered, square footage, and physical facility standards.

The intelligent use of such standards can establish minimum conditions for health and safety. But while these indicators help describe how human services are delivered, they do not reveal what was accomplished.

Rather than assuming that certain process criteria guarantee desirable results, we prefer to define and measure service outcomes directly. When known outcomes can be associated with specific process indicators, appropriate conclusions may then be drawn concerning how desirable results are to be achieved.

2. Human service output measures are client centered. Human service programs are "sold" to legislators, taxpayers, boards of trustees, foundations, and private contributors on the basis that the people to be served will be "helped," and, indirectly, the community as a whole will "benefit." Accordingly, human services are expected to "produce" changes in the person served--either in terms of individual functioning or life situation. The basic unit of measurement is the individual client. Output is defined as the changes observed and recorded for discrete client populations.

3. Benefits of human services are defined in terms of relative dependence-independence and program effectiveness is measured by changes in the relative dependency of groups of clients. Not all human service "outputs" are benefits. Some client changes may be irrelevant to the purposes for which a program was funded; other changes may be detrimental to these purposes. The object is to

define and measure only those client changes that relate to a consistent statement of purpose or program goal.

Since human services are provided to improve or maintain the physical, social, and productive capabilities of clients, it is useful to conceptualize a scale of relative dependence measured by amount or type of specialized inputs or help required.

For purposes of program evaluation, discrete degrees of dependence based on specific kinds of help required can be defined for different target groups. The movement of groups of clients from one degree of dependency to another can then be used to measure the achievement of program performance objectives.

4. Costs are to be reported for individual clients and distributed by outcome category. Since performance objectives are not defined or reported in most states, it is not surprising that cost data is not outcome-specific. Budgets are usually built on the basis of current fiscal year expenditures with automatic percentage increases.

As service effectiveness can only be determined by measuring output against objectives, cost effectiveness can only be determined by relating costs to output. Three factors influence the way cost data should be collected:

A) Different client populations ("target groups") may require different objectives;

B) Each client may receive different services or service mixes of varying intensity, from different agencies;

C) Program decision makers will want to analyze the relationships between diagnostic demographic, and treatment factors on the one hand and client costs and outcomes on the other.

The best way to assure that the data base will yield useful benefit-cost figures for a variety of client-service-outcome combinations is to tie cost determinations to the basic unit of analysis--the individual client. Accordingly, we have found it useful to employ a unit-of-service cost reporting method that calculates how much it costs an agency to deliver a standardized amount of each service type--including distributed supervisory, administrative, and staff training costs.

This procedure tells us the cost of serving a client during a specific time period--usually the fiscal year. In addition, service programs may have an impact on long-range system costs that are not reflected by the measurements outlined above. For instance, placing an institutionalized client in a foster home has long-term cost implications far beyond the cost of making the placement. Projections can be made concerning the length of time clients stay in various living situations and expected long-range public maintenance costs and ongoing service costs can be added to placement costs, expected benefit-cost ratios may be derived for client groups, service mixes, and agencies. These figures will reflect additional costs or savings accomplished by service programs.

I will now quickly review the steps involved in setting up a reporting system based on the four principles I have outlined.

First, target groups are defined. Target groups are mutually exclusive populations for whom objectives can be set and measured. Age and degree of disability are usually the major factors used to define target groups.

The second step involves formulating objectives for each target group. We usually seek some criteria that determine the relative independence-dependence of our target groups. These criteria must be easily observed and quantified; they must relate directly to the range of individual needs and problems of the target group; they must reflect major areas of concern and public expenditures.

Third, we have developed a system for distributing the population of our target group on a matrix--or grid--which shows the number of persons in various states of dependency and independence at any point in time. Individual client status reports are analyzed to redistribute the target population over time. This periodic redistribution is the basis for measuring past movement and for projecting future system performance.

Fourth, it is necessary to value weight different types of movement to reflect the program's objectives. For example, is it more important to move a client from a foster home to an independent living situation without any change in his employment status, or is it more important to train him for and place him on a job without any change in his living situation?

Is it more important to train a group of children in basic living skills to enable them to enter the public school, or is it more important to move another group of children to a group home from an institution?

Terrible choices, indeed. The hard choices are always between relative goods. But these are the choices that you all now make--consciously or de facto--every time you allocate more funds or trained manpower to one program rather than to another.

After these four steps have been taken, it is possible to measure the movement or maintenance of all the clients in the target group and to calculate the total value of these movements (or lack of movement). The numerical expression obtained represents the program benefit.

Actual measured movement constitutes program accomplishment or output. Actual weighted movement is program benefit or index of effectiveness.

The fifth step is to relate costs to the benefit figures. The whole point is to determine the amount and patterns of expenditures associated with various levels of effectiveness, accordingly, we use a cost-reporting scheme based on the unit-of-service concept. Achieved benefit divided by service cost is the benefit-cost ratio.

The figures obtained through the reporting and analytic procedures proposed above are appropriate for determining the efficiency with which retarded persons are moved or maintained relative to broad life situation objectives. Used wisely, this information provides an objective basis for planning and funding services; it permits decision makers to ask the right question. Benefit-cost figures are not a substitute for judgment, but a guide to systematic inquiry.

Among the issues involving the application of this information are:

1. Comparing programs;

2. Comparing target groups and the problem of low movement populations;

3. Additional information requirements for individual case management purposes.

How can we use cost-benefit data to compare programs? We may anticipate that some programs will have low ratios. It would be dangerous to assume immediately that the low figures represent poor quality or mismanaged programs. It is necessary to find out why some units appear to be operating less efficiently than others.

There are several possible explanations for varying benefit-cost ratios that may be tested. Because it would seem most important to improve the performance of low-ranking programs, it would be worthwhile looking at client characteristics. For instance, the total client populations of such programs may differ significantly in terms of degree or combination of impairment, age range, or both. It is also possible that certain program units serve a population containing a significantly disproportionate number of clients in specific states of dependency. Statistical analysis of caseload data will confirm or reject any of these hypotheses.

If significant differences in caseload characteristics are confirmed, several consequences are possible:

Benefit-cost ratios for clients having only these variant characteristics are compared throughout all programs. If these ratios do not vary widely, it might be concluded that the client subgroups in question are indeed more "difficult." We may therefore decide to:

- Increase allocations to units with high proportions of variant clients;
- Invest in research on treatment technology for this subpopulation;
- Investigate programs in other states where similar clients seem to be handled with greater success.

Weight the movement of the client subpopulation so that the more "difficult" cases "count" more;

Identify the client subpopulation as a priority target group and review plans and budgets on this basis.

If benefit-cost ratios for the subpopulations in question are markedly different in different programs, it would be important to determine the services or service mixes delivered to these clients in each program.

If high ratios are associated with some services or mixes and low ratios with others, we may want to approve plans and budget using the apparently "successful" services and recommend the establishment and utilization of similar services to low yield programs.

If there appears to be no difference in service type or mix, we may want to ask the low yield units if they can account for their performance in terms of significant client differences not elicited by the client reporting system. If evidence is not forthcoming or is not convincing, it may then be time to question the program's management, choice of services, or the unit costs. The final sanction is, of course, budget and plan disapproval and reduction or withholding of allocations.

How can we use cost-benefit data to avoid the incentive to look good by serving only those with potential for maximum movement--the "creaming" phenomenon? The single most important issue facing any evaluation system is the need for large scale measurements at the state-regional levels and the fear that such measurements will work against serving the more critically disabled.

The system I have described could be used in such a way as to result in the nonbenign neglect of the more severely handicapped. It could also be used to deny service to the less severely disabled. There are, however, various mechanisms built into the system that make discrimination against a client group difficult and overcome the possible incentives to neglect the "difficult" cases at the service level.

First of all, the movement-maintenance matrix depicts total target group outcomes. The system can be constructed to evaluate all retarded persons applying for service: those not served or served inadequately will constitute part of the outcome total. To the extent that any one group is neglected, and to the extent that such neglect results in less desirable (i.e., nonweighted) outcomes, the benefit-cost ratio will be diminished. Therefore, if target populations are consistent in composition from unit to unit (as they should be), an administrator will not gain a comparative advantage by discriminating against any particular group.

Secondly, the weighting procedure described previously identifies all types of possible client movement or maintenance relative to the measurement criteria. To the extent that preventative and maintenance possibilities are weighted, the successful serving of the more severely handicapped is valued and counted in determining the total benefit-cost ratios. It is up to the decision makers at the policy level to use this device. It is their responsibility to communicate the valuing of the maintenance and preventative possibilities to provide appropriate incentives for serving low movement clients.

In the third place, service priorities may be set for program expansion, and units can be funded accordingly. The priorities for new expenditures can be expressed in terms of target subpopulations (for instance, severely retarded multihandicapped) or in terms of situation (those on waiting lists for state schools and hospitals) or both. Programs funded for these priorities are evaluated by comparing the benefit cost ratios for the specific priority populations.

Finally, the states of relative dependence-independence can be broken down into finer component "states" that relate to personal development and progress not captured by gross movement data. If it appears that despite policy decisions and value weighting to the contrary, programs are serving only the less disabled persons, policy makers may implement an evaluation restricted to a comparison of the severely disabled categories.

In summary, it is possible to use the evaluation system to differentiate the outcomes of various client subpopulations. At a time when the demand for the service dollar exceeds the supply, it is necessary to make these difficult choices. It is simply not possible to do everything that should be done for everyone. But these choices should be made openly, on the basis of benefit-cost information, and with consistent follow-up data. An evaluation system does not itself compel decisions to the detriment of the more severely disabled.

In summary, the system outlined above is designed for the policy maker who must monitor large systems, establish goals, and allocate funds among programs and target populations. It is not a substitute for individual client evaluation systems which are needed on the case management level.

I have no doubt that within the next few years we will all be able to tell our legislative people and the general public the benefits derived from investing in effective programs for the retarded.

I have no doubt that it will be hard to convince many people that the current "touchy feely" methods of planning and decision making are not more humane. They perpetuate the chaotic struggle for the dollar--with agency pitted against agency in agency-dominated systems. We want our systems to respond to the needs of our retarded clients. They are the purpose--the sole purpose of our programs--and we must know what is happening to them and what works best for them, and what it costs to make it work.

REACTOR

Gareth Thorne

OVER-RELIANCE ON COST DATA IN HUMAN SERVICE PROGRAMS

Earlier in the discussion, someone commented on the problems involved in quantifying human services to the handicapped. In my opinion, we as professionals really shouldn't have to base human programs on the amount of money available. Somewhere—someday, the human need must become the priority. Hang the cost. There are precedents for this approach in other programs. For example, this nation stuck many billions of dollars into space programs; and then, when some didn't work, we stuck a lot more money into them to make them work. We didn't say that because we had failures that the program should be scrapped. Instead, we made damn sure it worked—and hang the cost. Nobody really questioned the additional expenditure because it was a commitment to a job to be done. The same commitment and rationale applied to human needs might well produce some wonderful results.

In our own field, it strikes me as foolish to talk about services to people and the costs of providing those services as though they are inexorably intertwined. I understand the restraints placed on us by limited fiscal resources. However, the professional should not have to weigh people and money on the same scale any more than development of space programs was really affected by cost accounting once the commitment to proceed was made.

It is easy to haggle over money, but not over morality. Nobody wants to do an immoral thing—at least not publicly. But many people, unfortunately, behave as though it is unimportant to do the moral thing. Why should we have to convince the legislature to do the right things for handicapped people? Are the needs of the handicapped so unimportant to them or others that we have to convince them?

THE PURPOSE OF COST ACCOUNTING SYSTEMS

Data systems and cost accounting must be related to people. I would be very unhappy with myself if the data systems and cost accounting methods that we use in Connecticut weren't specifically related to examining the program effect, and if and how people were better off because we spent X number of dollars. In my experience, the budget analyst who is out to save money is tremendously successful in preventing services from reaching people. His success becomes our failure because somehow he has convinced those that need to be convinced that what he is doing is more important in its effect than what we are doing.

Mr. Gareth Thorne is head of the Connecticut Office of Mental Retardation. Before assuming his present position in 1971, he served as superintendent of the Rainier State School for Retarded in Buckley, Washington.

MANAGEMENT BY OBJECTIVE: FROM THE BOTTOM UP

Let me illustrate my point by drawing an analogy between our work and operating a locomotive. Now, a locomotive engineer knows one thing for certain—that it all happens where the wheel meets the rail. If you don't understand the relationship between the wheel and the rail, then you are going to get absolutely nowhere. It is a tricky business operating a locomotive. The old steam engine engineer was an artist because he had to bring the relationship between the wheel and the rail into a proper balance of adhesion in order to move thousands of tons of freight. He had to operate the engine in a manner designed to get maximum adhesion before the locomotive could move a load many times its own weight.

I suggest that in the whole area of program management that we adopt this analogy. If our data can show us what is happening at the precise point of service delivery, between the programmer and the client, we might make some headway. It would help us to understand the "adhesion" problems and the artistry necessary to make the system work effectively in the client's behalf.

I believe that we've got our concepts of management sort of screwed up. It seems to me that we in management have to release responsibility and accountability to the person who is working consistently with the individual client. Traditionally, the person at the point of contact in our field is most often the lowest person on our totem pole in terms of wages, training and status. Such people probably do not understand cost accounting systems. You start asking questions about the number of man hours required to perform such and such a function and they really get confused, and perhaps not just a little concerned about our motives.

Our whole system of data processing and cost accounting should be one which makes visible the extent to which the direct service staffer—for example, the "program aide"—has turned the system on to the needs of his client. The person directly responsible for delivering services should be able to say, "This is what is needed by my client." My job as an administrator should be to create a bank of services appropriate to these needs, and the aide becomes the accountable person to see that they are delivered. Now that turns our usual management practices upside down. That makes the aide the boss, and it makes me the facilitator of needed programs, which is the way it ought to be if we are going to help people.

THE CONNECTICUT MANAGEMENT INFORMATION SYSTEM

In Connecticut, we are experimenting with a new system. It contains three basic components: (1) a long range plan; (2) a contract for services; and (3) a computerized data analysis and retrieval system.

Our long range plan is developed along a program by objective model. We defined our total state program objectives. We said, if we agree upon a specific objective, such as functional training for severely and profoundly retarded children, then we must delineate the resources necessary to accomplish these tasks. We then sat down and determined for each of the 12 regions of the State how many staff it would take to implement each objective and what kinds of additional facilities and other physical resources would be needed, and costed these things out.

The contract for services is probably one of the more interesting features of our program. As of the first of February of this year, we admit no retarded individual into the state mental retardation system for either day or residential services, without writing a contract which specifically states what we intend to do for the person during the ensuing few weeks. In other words, we won't take a person into residence in the institution just on an assumption that he needs residential services for an undetermined period. We take him for specific periods of time which may be renewed if necessary. The contract is based on an identification of the individual's major problems and the specific elements of those problems which can be dealt with by specific programs carried on over a designated time period. We designate the staff responsible for carrying out the program, how many hours of daily service will be needed, how we are going to evaluate the results of the program, and what the projected costs are. We work closely with the parents to decide what they are going to do. In other words, if there are parents available, what is their role going to be in reinforcing the services provided and otherwise seeing the contract through. The parents sign the contract, and we sign it as well. A copy is sent to my office, and we put it on the computer so we have the capability to constantly follow up on the status of each service contract. This is the heart of our new system.

One idea that we are now exploring is ways of contracting for services within the system. In other words, permitting the program aide to negotiate with the system on behalf of his client. Under such a procedure, the aide would actually contract with the system for a particular service.

If we can put this approach into operation, it should have a very fundamental effect on the role of the staff within our system. For the first time the worker with the most intimate knowledge and day-to-day contact with the client's problem now becomes identified as the case manager with the authority to assess the system in order to assure that his client gets the services required.

PROJECT P.L.A.C.E. (PROGRAM LISTING AND CLIENT EVALUATION)

Project P.L.A.C.E. is simply the computerization of our entire system. We have on the computer a detailed description of every program in the State which includes not only state-operated facilities, but all private community-based programs whether they are proprietary or non-profit. We have a good description of the kinds of people each program can serve, should serve, etc. In this way we can match the client with programs in the State throughout our twelve regions. Each regional center, through its terminal, enters on the computer all information on its clients, its services, and all of the service providers within its region. Each center is able to ask the computer, through its terminal, for information concerning available service programs throughout the State. Each regional terminal provides information on a particular client, on a selected group of clients, or on a program. Through any terminal, the computer will match a client to an appropriate program, give its location in terms of time from his home, the availability of funds, and so on.

The cost of the computerization is not exorbitant. For example, we plan to put information concerning the entire mental retardation program in the State of Connecticut on the computer with about 15,000 clients, about 1,200 programs, and

an undetermined number of people in a talent bank for less than $60,000 a year. So you can see that sophisticated data systems can be quite economical on a time-sharing plan.

One other thing that we are planning to do is develop a talent bank. Ordinarily the talent banks we talk about consist of highly trained professionals with specific areas of expertise. In Connecticut, we are not interested in computerizing such information because we already have that information available. What we are thinking about is a talent bank which will help us to identify and muster the special talents that the approximately 3,200 employees in our system have that we are not aware of. In other words, the typical non-professional employee who works day-by-day with the residents may have very special talents unknown and unused in his daily work. He may go home and as a hobby build TV sets or make furniture in the basement, or write music or paint portraits, etc. If we could get such people to volunteer to put on the computer information concerning their special talents, then the computer becomes a brain bank to draw upon. For example, if we want to build a better wheel chair, we could get names of all the people who know something about mechanics or design, bring such people together and say, "Here's our problem." We feel this might be a good means of utilizing some of the unique talent latent within the State's mental retardation system. It would also help with the general employee morale because employees will be given the opportunity to participate in and contribute new and unique ideas.

REACTOR

Robert W. Hayes

I found all the presentations this afternoon most interesting. However, one aspect of the problem which I thought was not dealt with in sufficient depth is the difference in information needs of decision makers at various levels. Obviously, for someone who operates at the state level, such as myself, there has to be a great deal of generalizing done with information and data. This is particularly true in a large, populous state such as New York. Otherwise, the data is too voluminous and very hard for you to use.

In New York, in my opinion, we have a poor information system. It is so primitive and so outdated that it drives me up the wall.

I was fortunate to work at Pacific State Hospital in California for a number of years when we became interested in gathering and analyzing client data - both of a cost nature and of an assessment or head counting nature. I became accustomed to having a fair amount of information that was useful to a manager.

One of the things that I noted as the Pacific system was developed was that there were few people in the institution who were interested in the final product - despite the fact that we controlled it and could do with it what we wanted.

I found it very hard to get many of our case managers, intermediate supervisors or middle management people who were responsible for specific programs interested in the kind of information that we could generate and distribute. Most of the time we sent it out and got back very few comments. Staff reactions are an important means of locating procedural or interpretive errors as well as determining the types of information and data which are of greatest value to the staff.

We also received little staff feedback when we instituted a cost accounting system at Pacific State Hospital. Yet, personally, I found the system had certain values even though it didn't answer all the questions. Frankly, it raised more questions than it answered

The system never would have operated very well if people didn't analyze it from their own experiential point of view and begin asking questions as to why certain figures came out the way they did. When you did that, sometimes you found out that the figures were skewed due to an error in computer programming or a failure of the staff to report accurately. So there were complications which affected the reliability of the system.

During the earlier discussion, I thought of a local illustration of the need for more sophisticated information systems. My next door neighbor is the superintendent of a local school district. In the State of New York the voters must approve

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the local school budget every year. I know my neighbor lives in fear of having his budget turned down by the voters.

Most of us can read a budget with some understanding. We have had a certain amount of experience so that we can look at it fairly quickly and determine what it tells us and what it does not tell us. The average person who doesn't deal with budgets, however, has great difficulty. I suspect that one of the reasons that there is a taxpayers' revolt at the local level is that many voters don't understand the fiscal and programmatic ramifications of the decisions they are asked to make. The fact that it is difficult to explain gives voters a rationale for voting down the school budget, for example. The question is not whether or not the kids are going to get the education they deserve or whether this program is more or less important to voters than another one, it is rather one of lowering, holding, or raising costs. As a result, budgets and bond issues are turned down and school administrators are left to figure out why they were voted down. Did the voters decline to approve the issue because they wanted the tax rate lowered or did they vote it down because they had a specific criticism of some feature of the school budget?

Cost data can be abused unless great care is exercised. For example, we get legislators and their constituents who look at the budget for a children's hospital for the emotionally disturbed that's putting most of its efforts into day programs. Unfortunately, the only thing that is recorded in the budget is that the facility has thirty people occupying beds on any given day. They take the total cost and divide that by thirty and come up with the disturbing fact that $25,000 per year is being spent for emotionally disturbed children in a certain area of the City of New York. Often, no amount of explanation and persuasion will change their opinion as to the true circumstances.

I am just pointing out that, although as a decision maker and as a manager I want better information on which to base decisions, I think we have to be cognizant of the fact that there are very real shortcomings built into most information systems. They won't respond to the needs of everyone. We have to find other ways of accomplishing this objective because I don't think our information systems will answer the kinds of challenges that we sometimes receive.

One final comment that I would like to make is about cost-benefit ratios. When I was back in school in 1967-69 at UCLA, I became very interested in this area. I wrote a few term papers about mental retardation and what cost-benefit ratios could do for us. However, I soon realized that we will still be faced with some of the same problems in trying to keep apples and oranges separate.

If you try to conduct any kind of a research project, one of the things that is the most difficult to do is to identify matching groups. You start getting into problems the minute you begin trying to say that this group matches that group. When you are talking about human beings the selection of matching groups is a very, very complex matter. Even if you are using an extremely sophisticated set of characteristics to identify target groups, there are always dangers. For example, after you have used your criteria for a while and have become wedded to the approach, you may notice some difference in the ratios. When you ask questions as to why there is this difference, you may discover that one of the causative factors is a consideration or characteristic that you didn't even think was operating.

My purpose here is to insert a word of caution that, although we should try to utilize, develop and take advantage of every tool that comes along, we have to be quite cognizant of the limitations built into information systems and analyze these shortcomings.

I always remember the remark in George Homan's book on Human Groups. He said, "we have a tendency to quantify that which is easiest to quantify rather than quantifying the important." We continue to struggle to find ways of quantifying the important.

ANN WOLFE, M.D.—Are we making a mistake in emphasizing the use of cost benefit and cost effectiveness techniques for the retarded? Other agencies will be planning in the same way, and I wonder if the gains that their people make may not be more dramatic than the gains that our people make. What I'm suggesting is, could we possibly be slitting our own throats. Could this backfire in our faces?

TOM FRASIER—I think the opposite will occur. Top quality cost analysis studies will tend to highlight the benefits of structured developmental programs. Our services are directed toward specific kinds of individual needs. A good management information system will help agency administrators to identify those needs and specify resources more accurately and more objectively.

ARTHUR BOLTON—If the system doesn't have humanistic goals, it is not an appropriate system. A good cost-benefit system is a way of translating those humanistic goals into something that is measurable so that you can know whether you are achieving your goals and what you need in order to accomplish your objectives. The starting point for a cost-benefit system is not the question of how much money can we cut.

As soon as you use the word cost, everybody gets very nervous and there is an assumption that somehow or another this is going to be a budget cutting weapon. Another way of looking at it is that money is a way that we buy certain services so that we can accomplish desired objectives—humanistic objectives that we have established for the people that we are concerned about.

Okay, how much money do we need to accomplish those objectives? How will we be able to go to those who provide the money and show them that the humanistic objectives are being accomplished by this program or why we may need additional money to accomplish for 10,000 people what we demonstrated we were able to accomplish for 100 people. Don't let the language of cost analysis scare you off. Certainly, one could design a cost-benefit system with some pretty awful values attached to it; it is a question again of who is doing the designing and what objectives you are going to build into that system.

FRASIER—Mr. Thorne's remarks about permitting the lowest possible staff level person to make the management decisions which can be made at that level are very much to the point.

GARETH THORNE—I also think it will make it more realistic for the legislator who will have to make decisions about appropriating public funds.

CHARLES ACUFF—Gareth, did you mean it when you said "hang the cost" of the program?

THORNE—I'm saying that as a programmer and as an administrator I really can't be concerned about money and I don't think I should be.

ACUFF—You must not deal with the same type of legislator as I do.

THORNE—I understand the reality of dealing in the real world. I've been interacting with legislators in a number of states for many years, as you know. I haven't been successful in getting them to believe what I believe, but the point is they haven't changed my beliefs either. In other words, I will continue to approach the legislature with the message that I am really not concerned about the money as much as I am about the program. If it costs $100 million dollars, he ought to know

it. Then, he can worry about where the money will come from and how this request stacks up in the order of priority with the many other budget requests he has before him. I shouldn't worry about such matters because if I start thinking about it and considering what the legislature is likely to think about it, then I'm going to pare it down and not tell him what it is really going to cost. I'm going to tell him something I think he wants to hear and what I think he will fund.

And so I say hang the cost because we've hung the cost on wars, the cost on highways, and all kinds of national programs. In the past I think that we have compromised ourselves: we have copped out a little bit.

BOLTON—One of the problems with that approach is that we have been playing that game for a good 25 years or so and recently we have been losing. When the executive branch and the Congress determined that they would put a ceiling on social services funds, one of the most compelling arguments that they were able to use was that we have been sold a bill of goods. We don't know what we are getting for this money. It's just a raid on the federal treasury by a lot of well-meaning social workers.

Indeed, in 1962 when the Social Security Amendments established the 75-25 matching ratio for social services, the social work profession went before the Congress and said in effect: "Look, if you want to cut welfare, you give us money to do good things with people; we will provide them with services, we'll help them to re-establish their lives and they won't be on welfare." The Congress said in effect, "Okay, we'll take that gamble." And ten years later that group of well meaning professionals was unable to demonstrate any accomplishments despite the fact that several billion dollars had been expended during the course of the ten year period.

When we talk about the need for cost data, all we are saying is that it serves a number of purposes, only one of which is to describe to the public what it got for its investment in terms of changes in people's lives. The information is also useful internally. In a state where you've got to make decisions about whether you are going to put money here or there—and you don't have the luxury in most states of an unlimited reserve—you've got to make some tough choices about whether it's going to go here or there. By and large, those choices have been made in most states on the basis of just plain out and out political pressure. Who can amass the greatest and most vociferous push for the dollar. If you've got an agency with good public relations and a few influential friends it tends to procure a larger chunk of dollars than some struggling little agency off in the corner.

It would be very useful to have better information for parceling out the money so that we would have some greater degree of assurance that the humanistic objectives of the program were being accomplished. That's all that we are really saying with all of this elaborate economic language. The data is important in defending the program; it's important in selling it; it has important educational value and also enables you to make better policy decisions; and, finally, it helps people who work in the field to begin concentrating on those kinds of improvements for the clients served which will produce the greatest change in their lives.

How do you make those choices? Well you ought to make them at least consciously. Right now we make them anyway. For example, we may happen to have someone in the program who is a darn good speech therapist and pretty soon, before you know it, a lot of our money is shifted in the direction of speech therapy. Well, maybe it's important for the group of kids we are serving in the program. On

the other hand, if we are dealing with a group of pre-school youngsters that are not potty trained, that fact may be one of the greatest barriers to their entry into the public schools. So they develop pretty well as far as their speech is concerned but none of them can go to the bathroom by themselves and, consequently, they don't get into the public school system.

Without carefully thinking through where you want to get, inadvertently you end up doing things by tradition and when you take a look at your program a few years later, you begin to wonder why did we invest so much in that particular activity as opposed to some others.

THORNE—Historically, in this country, if there's any goal the country wants to reach, and it makes up its mind to do it, it's done. But only if it makes up its mind to do it. Nobody thinks much about the money expended on accomplishing the goal.

I don't think our goals are going to be accomplished any faster because we get all kinds of accounting people in the picture and show how well we are using the money we've got now.

FRASIER—I really take severe exception to the last remark because I believe, as Mr Bolton does, that when we came up against the argument in limiting federal social service expenditures to $2.5 billion that, had there been real demonstrable programs with concrete data on human progress, we would have been on much stronger ground. We may not be able to measure human dignity, but we can get some answers about where Johnny Jones was in June and where he was at Christmas time in terms of his communication skills. If we are able to say that at a cost of $510 dollars that we can increase Johnny's motor skills from level A to level B, I believe that we will have a much stronger argument than all the impassioned and legitimate cries about the human suffering that is going to occur when monies are cut off.

SAMUEL ORNSTEIN, PH.D.—There isn't anyone who doesn't want more data and doesn't want his money spent in the way that gives him the greatest effect in meeting his goals in the cheapest way possible. However, the reality is that such a system, in its full blown state, calls for certain structural prerequisites. You have to have a defined decision making process; it has to rank choices or alternatives in some sort of hierarchical order; the whole system must be uniform so that, if one sub-part of the system doesn't work in a particular manner, then all the rest don't either.

The honest fact is that most of our systems don't fit this model because the important variables are not controllable by people in positions like ours. There are all sorts of examples.

Take our system. Anybody is a fool who believes in going to the central budget agency and taking them at their word because: (1) they are usually understaffed; (2) the budget process is a mess; and (3) the legislature has no staff and they come together for 90 days and in the last two hours of the last day the budget is hastily approved.

There are a lot of people in budget agencies who believe in the Holy Grail; they want to make rational budgetary allocations and, if you hit them right, and say: "Look, we have two alternatives. You can add 250 beds to this facility or you can give me some money for a community program and I'll set up the same number of beds in a series of small group homes." They are so thrilled with having a choice like that—it's so rare—that they might buy it and you may have them on your side.

When you consider institutions, you have to accept the fact that in most states union membership is now mandatory. Employment rules are tightly controlled; there is no operating flexibility and flexibility is necessary to make a decision. So you are forced to operate in a way that capitalizes on the inflexibility of systems. For example, you know that no matter what the legislature or central budgeting agency wants to do, they cannot reduce the cost of institutions. Not because they can't justify it, but because every time they try to do it the union raises hell and local legislators start screaming about the detrimental impact on the economy of the area.

In summary, I'm saying I'm for it. Someday it might happen, but anybody who operates as a pragmatic energizer of the system, a manipulator between competing forces, must seek out the pivotal point and sort of push it; that's about all you can do.

SEN. ERNEST DEAN—I think whether you call it cost accounting or whatever you call it, modern legislators are looking to get their money's worth out of public expenditures. I think the average legislator feels frustrated about how to measure the effectiveness of programs being supported with public dollars.